This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

B 3 9015 00210 656 8
University of Michigan – BUHR

Digitized by Google

GENERAL LIBRARY
OF
UNIVERSITY OF MICHIGAN

PRESENTED BY
The Society
Oct 25 1899

Digitized by Google

6105
W62
M5
S66t

Digitized by Google

Digitized by Google

TRANSACTIONS

OF THE

Michigan State Medical Society

FOR THE YEAR 1899.

VOLUME XXIII.

GRAND RAPIDS:
PUBLISHED BY THE SOCIETY.
1899.

Digitized by Google

Digitized by Google

PUBLICATION COMMITTEE.

A. J. ABBOTT, - - - - - - - - ALBION
CHRISTINE ANDERSON, - - - - - - DETROIT
JOHN A. McCOLL, - - - - - - GRAND RAPIDS
CHAS. E. STEWART, - - - - - - BATTLE CREEK
COLLINS H. JOHNSTON, - - - - - GRAND RAPIDS
CHAIRMAN AND EIDTOR OF TRANSACTIONS.

Bender & Brewer, Grand Rapids, Official Stenographers.

The Society does not hold itself responsible for the views expressed in the papers read at its meetings.

Digitized by Google

OFFICERS OF THE SOCIETY.

1899-1900.

PRESIDENT.

A. W. ALVORD, Battle Creek.

VICE-PRESIDENTS.

PHILO D. PATTERSON, Charlotte.
B. D. HARISON, Sault Ste. Marie.
H. W. LONGYEAR, Detroit.
J. B. BRADLEY, Eaton Rapids.

SECRETARY.

COLLINS H. JOHNSTON, Grand Rapids.

TREASURER.

CHARLES E. HOOKER, Grand Rapids.

OFFICERS OF SECTIONS.

SURGERY AND OPHTHALMOLOGY.

G. W. LOWRY, Hastings, *Chairman.* A. J. ABBOTT, Albion, *Secretary.*
O. A. LA CRONE, Kalamazoo, *Orator.*

OBSTETRICS AND GYNECOLOGY.

O. H. CLARK, Kalamazoo, *Chairman.* CHRISTINE ANDERSON, Detroit, *Secretary.*
EUGENE BOISE, Grand Rapids, *Orator.*

GENERAL MEDICINE.

T. A. FELCH, Ishpeming, *Chairman.* JOHN A. McCOLL, Grand Rapids, *Secretary.*
A. E. CARRIER, Detroit, *Orator.*

JUDICIAL COUNCIL.

ONE YEAR.

A. W. ALVORD, Battle Creek. PERRY SCHURTZ, Grand Rapids.
J. E. EMERSON, Detroit.

TWO YEARS.

A. N. COLLINS, Detroit. C. H. McKAIN, Vicksburg.
J. J. REYCRAFT, Petoskey.

THREE YEARS.

B. D. HARISON, Sault Ste. Marie. H. B. LANDON. Bay City.
H. B. OSBORNE, Kalamazoo.

Digitized by Google

STANDING COMMITTEES.

1899-1900.

EXECUTIVE.

B. D. HARISON, Sault Ste. Marie.

E. H. POMEROY, Calumet.
T. A. FELCH, Ishpeming.
F. E. FLETCHER, Lake Linden.
J. H. BOGAN, Mackinac Island.

FINANCE.

GEO. E. HAFFORD, Albion.

D. MILTON GREENE, Grand Rapids.
D. W. C. WADE, Holly.
F. W. ROBBINS, Detroit.
G. W. LOWRY, Hastings.

ADMISSIONS.

A. E. BULSON, Jackson.

W. H. HAUGHEY, Battle Creek.
C. B. BURR, Flint.
G. D. CARNES, South Haven.
L. S. GRISWOLD, Big Rapids.

NECROLOGY.

J. H. REED, Battle Creek.

GEO. HOWELL, Tecumseh.
P. A. KNIGHT, Utica.
GEO. K. JOHNSON, Grand Rapids.
C. B. STOCKWELL, Port Huron.

PUBLICATION.

COLLINS H. JOHNSTON, Grand Rapids.

CHRISTINE ANDERSON, Detroit.
JOHN A. McCOLL, Grand Rapids.
A. J. ABBOTT, Albion.
CHAS. E. STEWART, Battle Creek.

NOMINATIONS.

ANDREW P. BIDDLE, Detroit.

EUGENE BOISE, Grand Rapids.
W. F. BREAKEY, Ann Arbor.
E. W. DAVIS, Saginaw.
C. H. McKAIN, Vicksburg.

Digitized by Google

SPECIAL COMMITTEES.

To Petition the Legislature with Reference to an Improved Plan of Registering Births and Deaths.

LEARTUS CONNOR, Detroit.

EUGENE BOISE, Grand Rapids.

The American Medical Association will meet at Atlantic City, N. J., June 5th to 8th, inclusive, 1900.

Digitized by Google

CONTENTS.

Page
Publication committee 3
Officers of society, sections and judicial council 4

ERRATA-CORRIGA.

Further changes in residence of members coming to notice too late for publication:

T. M. Coon, from Casnovia to Grand Rapids.
A. S. Rogers, from Ann Arbor to Saginaw.

Page 50. Officers of Surgical Section elected:
Chairman, G. W. Lowry, Hastings.
Secretary, A. J. Abbott, Albion.
Orator, O. A. LaCrone, Kalamazoo.

Page 206. Section on Surgery and Gynecology should read "Obstetrics and Gynecology."

Page 409. Name Arthur W. Scidmace should read "Scidmore."

Page 420. In thirty-first line, the fourth word should be "nine" instead of "seven."

2. The medical treatment of puerperal infection with especial reference to serum therapy, H. W. Longyear 214
3. Surgical treatment of puerperal sepsis, A. W. Alvord 227
4 Excerpta and deductions from the records of gynecological cases, J. N. Martin 241
5. The technique of Alexander's operation, Eugene Boise 254
Section on General Medicine 262
1. The epidemic at Siboney, C. T. Newkirk 264

Digitized by Google

CONTENTS—CONTINUED.

Page

2. Report of a case of marked disturbance of the digestive tract, caused by an undeveloped uterus, J. N. Martin 276
3. Prognosis of pneumonia in its relation to the etiology, H. M. King . 279
4. Contagious cutaneous diseases, A. E. Carrier 290
5. Primary syphilis, R. H. Spencer 301
6. Vaccine, Chas. T. McClintock. 314
7. Temperature and disease, H. J. Chadwick 329
8. Stricture of the œsophagus and electrolysis by a new œsophageal electrode, Charles D. Aaron 334
9. The relation of climatic to other methods of treatment in pulmonary tuberculosis, H. M. Dunlap. 348
10. What should be the attitude of the medical profession toward proprietary preparations, Chas. E. Yarbrough 353
11. The early recognition and treatment of insanity at home, W. G. Edwards 359
12. Moral imbecility, David Inglis 377
13. A brief account of the minute anatomy of the sympathetic nervous system and its relation to the cerebro-spinal nervous system, G. Carl Huber 398
14. A series of analyses, in acute melancholia, of the stomach contents after a test breakfast, Samuel Bell 409

General Session, minutes of—

Addresses of welcome 417
Report of executive committee 418
Secretary's annual report 419
Treasurer's annual report 422
Report of publication committee 423
First report committee on admissions 424
Report of committee on registration of births and deaths 424
Report of committee on legislation 425
Report of committee to act on motion to debar abortionists 432
Report of committee on revision of constitution 433
Report of committee on necrology 435
Second report of committee on admissions 439
Report of finance committee 439
Report of committee on nominations 451

Constitution and by-laws 454
List of presidents and vice-presidents 462
Honorary and corresponding members 464
Active members by counties 465
Active members, alphabetical list 475
Changes in membership 479
Regular medical societies in Michigan 481
In Memorian 482

Digitized by Google

THIRTY-FOURTH ANNUAL MEETING

OF THE

Michigan State Medical Society

HELD AT KALAMAZOO,

May 4th and 5th, 1899.

ANNUAL ADDRESS OF THE PRESIDENT.

ETHICS AND COMMERCIALISM.

ERNEST L. SHURLY, M. D.,
Detroit.

The subjects of the following remarks—"Ethics and Commercialism,"—become very interesting when we reflect upon the gradually growing tendency towards adopting commercial instead of ethical standards for governing human action. In alluding to ethics, however, I refer to the broad domain of moral philosophy applicable to all people and not to the limited area of conduct known as medical ethics, formulated for a particular class of persons.

As you are aware, codes or systems of ethics did not originate with modern civilization, nor even with the aborigines of earlier periods, for, according to the evidence based on

Digitized by Google

archieologic data, prehistoric man lived under a system of communionism which embraced rules of conduct similar to our systems of ethics. Indeed, the lower animals which live gregariously, display in their community organizations a regulation of individual conduct which seems analogous to human ethics, as exemplified by the actions of herds of wild mammals, flocks of birds, and communities of insects, such as ants and bees; nor is this to be wondered at when we consider the necessity for mutual protection against the exercise of individual avarice, prowess and cunning which must arise among all animate free agents that dwell together. Organization and therefore ethics is a corollary of association and springs primarily from selfish motives. It involves the relinquishment of more or less individual impulse or liberty and the acceptance of restraint. Rules of conduct—according to HERBERT SPENCER and other philosophers—arise from selfish motives primarily, a hope of reward either now or hereafter being one of the strongest incentives for the regulation of conduct. Therefore the abstract idea of right and wrong is arbitrary and based upon the circumstances and environment of the collection of individuals affected. Hence what is wrong in one locality or with one nation, may be deemed right, or at least not wrong in another.

There was a time when civilized man according to race and location were the subjects of one religion or one political system, the masses giving an absolutely slavish acquiescence to either one or both, and when to oppose in thought or deed the dictates of the presiding or sovereign potentate constituted a great crime. Of late years, however, owing to the effects of more liberal education and an insight into nature, (effects which I am happy to state have been largely due to the glorious system of free public education inaugurated by the United States), the mind of man is becoming emancipated from slavery to dogmatic authority, and consequently independent thought capable of reviewing authority may be freely indulged in. He thinks more and acts more for himself. Just how far we will go in this direction, and what results may ultimately follow, remain to be seen in the future

Digitized by Google

by the evolutionary processes which independent nations are undergoing. Perhaps the pendulum may swing too far the other way, and disorganization instead of improved ethic organization may ensue. Ethic evolution, or in other words, social readjustments, usually go on slowly, for as IBSEN says, it is the minority only in every community that does the thinking. At the present time we see the most intelligent nation in the world next to our own, submitting to the government of a monarchy which is nearly absolute. We see also a nation of naturally talented people, held in mental and social slavery by a church on one side and a czar on the other; an absolute monarchy whose principle efforts seem to be directed toward the suppression of Nihilism, the persecution of the Jews, and the conquest of poor China.

Notwithstanding the foibles and senility of monarchical systems of government as viewed from an American standpoint, the obedience to authority exacted by them constitutes an ethical virtue which we are bound to respect, and one which we, too, recognize, although in the form of a 30th dilution. We, who are law abiding, should hold ourselves obedient to the law and to the officers who administer it, and generally so do, not because we dread penalties, or feel the disgrace of our non-ethical conduct in failing to obey, but because it is more convenient to do so, for be it said to our shame, a man may defy the law in this country, and not only retain the respect of his fellows, but sometimes meet with applause for it. Principle is too often replaced by expediency. A judge may even be criticized for rendering a decision on a principle of law because it may affect adversely a large class of people. In other words, he is expected to decide a given case, not on principle, but because a large class of people would be affected by it commercially. Now, this sort of class government we criticize in monarchical systems, and yet we are tacitly demanding the same thing in a round about way ourselves, because avarice and self-interest in forms of commercialism are really dominating us. This comes from the deplorable fact that business cunning (which is purely an aboriginal trait) is being recognized as a predominant force in our body politic

Digitized by Google

to the detriment of an ethical system based upon principles of justice and integrity. Through apathy to ethic principles our political state would be deplorable were it not for the competition and antagonism of the political machines, one or several persons building up a political machine, so-called, in order to further their ambitions. This machine flourishes for a while, and then its integral or individual factors work for personal gain and favor, chiefly to keep themselves and their friends in office. This constitutes the glory of their achievements. The candidate gives no thought concerning his fitness for office, neither do his friends who demand the office for him. The only thing considered is that he has done this, that or the other political job, and that the office pays so much per annum. The consequence of all this is, that the ethical principles of our governmental system are debased and annihilated by commercial politics. By submission to it we are generating a craft of professional politicians, whose primary and ultimate aim is to pursue the business of politics only. The proper administration of office, while being considered perhaps laudable by these men, is nevertheless only a secondary matter. Take for instance the municipal boards or commissions of our cities. Instead of quietly and effectively conducting the business for which they are organized the members spend two-thirds of the time in wrangling over a candidate for employment, on the basis of whether he may have this or that political influence; not whether he is or is not fitted for the position in question. Hence a reliable and competent employee is unable to retain his position unless he becomes a vote-getting henchman of the political machine in power. The manning of of public boards with professional politicians or adherents of political machines is a serious menace to municipal government. I care not how honest the intentions of one or two of the individuals may be. It may be said without fear of successful contradiction that the worst enemies of our commonwealth are the professional office-seekers. In Detroit, there is one board which has been fairly non-partisan for years, and it is unnecessary to state that its record is magnificent in

Digitized by Google

every respect. I allude to the Poor Commission. I do not wish, however, to be understood as making invidious comparisons, because other municipal boards of Detroit have been exemplary in the performance of duty. I merely mention the one because I believe it has been less troubled with political ulceration than the others. Now, if the proper ethical spirit were observed (and I mean by the term the relinquishment of political and commercial self-aggrandizement and the substitution therefor of a high sense of justice and duty) a purely representative government like ours would not degenerate into a miniature absolute monarchy nor an unjust oligarchy.

Again, outside of public life the tendency to think that every transaction is honest because it may be technically legal is calculated to neutralize desirable ethical rules of action. While a certain code of ethics, I am happy to say, is still closely followed by a large class of business men, yet there are very many men with apparently honest intentions whose sense of obtundity to certain methods of doing business, is very striking. A few years ago I chanced to meet a man who had made a large fortune out of the sales of nostrum, the labels and folders of which were teeming with notorious falsehoods. The proprietor in question, was a very worthy man as the world goes. Becoming well acquainted with him and being engaged one day in conversation on the subject, he appeared very much amazed at my ethical views upon such advertisements. When I tried to convince him that the process of deceiving his fellowmen by cunningly framed certificates, and promises to cure all disease that flesh is heir to, was decidedly the same sort of device that the gold brick man and the confidence man resorted to, he seemed shocked at the revelation, although his defensive arguments were apparently silenced by the feelings of regret awakened by an ethical expose of one of the labels and wrappers attached to a bottle of his business commodity; nevertheless he will probably retain his money and console his conscience by the same reflection that all participants in shady transaction resort to, namely, the thought that people did not have to believe his advertisements, and if he had not done as he did somebody

Digitized by Google

else would. In other words, he would not blame himself because the fools bought his nostrum when they were not obliged to do so.

The seeming innocent as well as willful ignorance of ethical conduct in the commercial and social walks of life is particularly annoying to medical men, who have to deal practically with the humanities more than any class of persons, excepting the clergy. We often observe that intelligent people, generally seekers for novelty, will readily take medical advice from some unknown illiterate man or woman, or follow the dictates of some extravagantly worded advertisement (while knowing perhaps that most all advertisements are lies), and, moreover, that many persons in prominent positions will allow their vanity to be so tickled as to suffer the publication of their fancied ailments with a photographic embellishment. Perhaps in the near future, we may see some one running for Congress as a candidate of so and so's bitters, or nervine. This nostrum vending has been a growing evil, not only in suggesting to many well persons the idea that they are ill, or deluding those who are slightly ailing into the belief that they are suffering from some dreadful malady, but the commercial prosperity which often attends such ventures has led many hitherto honest reputable manufacturing and commercial houses to adopt similar methods of doing business under false pretences. The extensive patronage bestowed upon nostrums and charlatans has in a few instances induced reputable practitioners to stray from the ethical path into the devious dishonest by-ways of quackery and nostrum-selling. Like Browning's Paracelsus, after years of honest toil in seeking for knowledge and skill, they are led by the observation of the commercial success accompanying charlatanism, into adopting it for purposes of pecuniary gain.

Notwithstanding the example of our faithful adherence to a broad system of ethics, the principal aim of which is the protection of the public from the evils of advertisements and from charlatanism; from epidemic diseases, and from dangerous unsanitary surroundings, and in spite of the fact that the medical profession has been instrumental in the prevention

Digitized by Google

and stamping out of numerous virulent scourges, and has otherwise as a professional body been faithful in ministering to the poor, the unfortunate, and to the best interests of the people generally, yet there are relatively few who fully appreciate or who understand the high moral import of our code of ethics, and the cogent reasons for our aversion to advertising. Just think of it! What a death blow to the advancement of science! What a terrible state of physical, social, and moral degeneracy would supervene, if the whole reputable profession were to throw aside ethics and vie with each other in publishing fulsome braggadocio statements, disgusting photographic certificates, and lying advertisements to deceive the public generally! This is what some thoughtless persons would have us do. The laity generally have no conception of the security they receive from the ethical conduct of the educated medical fraternity. The natural reserve which professional etiquette engenders is very generally misconstrued by the laity, while the necessary irregularity of the physician's daily routine in attending the sick, often renders it impossible for him to take an active part in public affairs. For these reasons the moral and social influence of the medical profession is to a great extent unappreciated, and in consequence its members are apt to be ignored in public matters. The politicians seem desirous of filling all offices with their kind, even trying to fill medical positions with non-medical persons. This would create no trouble of course, if the appointees were competent, but they cannot be, for lack of training, if for no other reason. However, in a government (if I may be allowed to paraphrase an aphorism of the beloved LINCOLN) of the people by the politicians for the politicians, such public action is to be expected. The filling of medical positions by laymen is decidedly wrong in principle, and not subserve the interests of the people at large. Boards of health should be composed of reputable physicians entirely, also the boards of all institutions designed for the care of the sick or infirm. In short, the custody of all affairs belonging in any way to the *public health* ought naturally to be in the hands of competent medical men. The people of this state for years have been

Digitized by Google

at the mercy of a large number of illiterate and in some cases unprincipled medical practitioners. Many legislatures have come and gone, and in the shadows of their triumphant march, in pigeon-holes of oblivion, may be found a hoard of medical bills not passed. What the fate of the biennial scroll of this year will be, none save a human ichneumon can tell. However, if its provisions fail of the proper recognition, it will be no fault of your industrious committee headed by its irrepressible and logical chairman, aided by the indefatigable attention of DR. HOWELL, the medical member of the House of Representatives.

The question now arises what, if anything, ought we to do in fulfillment of our ethic duty to the communities in which we live? Shall we stand like dumb beasts, and assent to the supremacy of commercialism over ethics, and by the silence acknowledge "That robbing a hen roost of a hen is mean, but stealing thousands makes us gentlemen?" or assent to the barbarous doctrine promulgated by political cormorants that, "To the victor belongs the spoils?" or shall we as a teaching element of the body politic assist in the dissemination of the doctrine of ethics "the governing intelligence," as formulated in the words of MARCUS AURELIUS? It seems to me, our duty to humanity is clear enough. We should take new life in combating fraud and humbug. To accomplish such laudable ends we must strengthen the Michigan State Medical Society and extend its influence. We must not falter in teaching our neighbors that the wholesome rules of moral conduct contained in the broad code of ethics, which every Christian should live up to, apply to the discouragement of all quackish and sinister methods of practice, under whatver name they flourish. We must aggressively and fearlessly combat in every quarter shady and misanthropic business methods, and finally we should insist that the administration of affairs for the preservation of the public health should be practically left with the medical profession. If the gospel of true ethics be preached assiduously, the epoch will arise when honor, justice and philanthropy will prevail, and commercialism will bend the knee at the throne of ethics.

Digitized by Google

THE VALUE OF COMPLETE DIAGNOSIS.

FRITZ MAASS, M. D.
Detroit.

The basis for successful treatment is correct diagnosis. Acknowledging this, we do not mean to say, that a cure is impossible under a wrong diagnosis or without any diagnosis at all. Nature may be able to overcome our mistakes and insufficiencies. But, as a general rule, help can only be afforded to a patient, seriously ill, if the true character of his affection is well recognized. As long as a correct diagnosis guarantees the restoration of health there is no necessity in behalf of treatment for a deeper understanding of the case for a complete diagnosis.

Tuberculosis of the knee joint, cancer of the breast, urethral stricture and the like generally are easily recognized. More frequently we meet with diagnostical difficulty in affections of the abdomen and chest. Difficulty being the exception in regard to correct diagnosis, becomes more and more the rule the deeper we try to enter into the understanding of a certain case. There arises the question of origin and limits of the correctly diagnosed disease, the question of hidden concomitant pathologic changes, the question of causal connection between the different symptoms and others. In trying to answer them we may be confronted with irremovable obstacles, may not gain any more knowledge and may lose time in frustrated efforts. The investigation frequently is not interesting in itself, and only may consist in certain simple examinations to be repeated again and again in case negative results are obtained. Consequently it is only too natural for one to be tempted to save time and be satisfied with a correct

Digitized by Google

diagnosis. To counterpoise such a tendency to limitation of diagnostical efforts, the value of the complete diagnosis must impress itself strongly and frequently upon our mind. Considerations like these induce me to discuss the subject in question at the opening meeting of our section. The instances of personal experience referred to further on are rare, not new. As they may call back to the memory similar observations, lost under fresh impressions of recent days, I hope they will be welcome.

As long as a correct diagnosis guarantees the restoration of health there is no necessity in behalf of treatment for a deeper understanding of the case for a complete diagnosis. But we meet with cases where correct diagnosis promises good and complete diagnosis better results. The therapeutic measures adopted for one localisation of the disease may be influenced by the affection of another organ. For instance, two organs infected at the same time by the tubercle bacillus may render the correct diagnosis of one localisation entirely insufficient to select the proper treatment. We all know that the removal of a tubercular joint deposit favourably influences the nutrition of the whole body and consequently a simultaneous pulmonary affection. Quite frequently it is not necessary to pay any attention to the latter in selecting the treatment for the former. Only occasionally it is different and the question to complete the diagnosis in regard to the lungs, after the joint affection has been correctly diagnosed, becomes of the greatest importance. About three years ago I saw a patient 45 years of age with an intensely and extensively swollen tubercular knee joint. Subluxation and deviation of tibia indicated bone destruction, and severe pain at the slightest movement excluded any use of the leg. There was fluctuation and a large area of the skin was shining and discolored. Perforation was threatening. The patient coughed and was greatly emaciated. For the very reason that the soft parts of the joint itself and surrounding the joint were so much infiltrated and of low vitality I did not hesitate to recommend amputation. The man being a common laborer, with a large family depending upon him, objected, and indeed

Digitized by Google

a stiff leg would have been bad enough for him. But a resection under such a condition of the soft parts? If it were possible, a speedy healing and consolidation hardly could be expected, and prolonged confinement with a granulating and naturally discharging wound, would it not be too much strain on a man with pulmonary tuberculosis? A more complete diagnosis involving the lungs was of the greatest importance. The mucopurulent sputum amounted to about half a pint in 24 hours. A destructive process in the organ, by external examination, would not be detected. Repeated microscopical examinations of sputum also remained negative. Relying upon these results I agreed to a resection if it should prove possible during operation. It was done and the expected happened, a large part of the skin becoming necrotic. About half a year elapsed before the patient could leave his bed with plaster paris. The closure of the last fistula and consolidation took place not earlier than one year after operation. Fortunately the cough ceased entirely soon after the operation, and the man improved generally. In case the pulmonary affection had been tubercular and been disregarded as a contra indication to resection, the operation which finally proved a blessing would have been an inexcusable mistake. On the other hand, taking the diagnosis pulmonary tuberculosis for granted without further examination, and to have amputated might have bordered on a crime. Nobody can question the value of a complete diagnosis under such circumstances.

A correct but incomplete diagnosis may cause or hasten a great disaster, and, nevertheless it may be difficult to see where its true value in case of completeness would have been. A lady about fifty years of age was sent to me for treatment by Dr. Imrie of Detroit, with the correct diagnosis tubercular abscess of the groin. The patient readily gave her consent to aspiration and iodoform injection, as an operation not very reliable in its curative effects but attended with hardly any danger. There was no indication of an advanced pulmonary tuberculosis or other serious complications. The person had lost flesh and was pretty lean, but had performed her duties

Digitized by Google

in some office until recently. The large femoral vessels easily could be felt passing over the abscess and there was no danger that the trocar might collide with these or the peritoneum, the abscess being below Poupart's ligament. I did not think that any further investigation was necessary and performed the little operation, going in well lateral from the vessels, first down to the bone and then turning into medial direction, reached the abscess. For a moment characteristic tubercular pus was flowing, soon it turned red and finally pure blood spurted like from a large artery. The trocar was withdrawn, a long incision hastily made and a good sized artery, well lateral from the femoral, seized and tied, the abscess cleaned and drained with gauze. The femoral and popliteal arteries were both pulsating. The disaster seemed not to be very grave. The patient had lost the chance of a rapid healing without an open wound, which, at her age, was not very great anyhow. But the damage done by this harmless operation soon proved to be greater. The second day signs of necrosis appeared in the foot and progressing slowly finally made amputation of the lower leg necessary. As the popliteal always was distinctly pulsating, one would hope that collateral circulation would develop, a hope which did not realize as stated above. What was the cause of the necrosis and how would it have been prevented in case a more careful investigation had suggested the impending danger? As to the cause, I believe that the femoral artery was more or less compressed by the abscess and that somewhere below a coagulum had formed, which was thrown down beyond the knee as the full stream returned into its old course after emptying the abscess. The artery wounded by the trocar was either a collateral, enlarged after compression of the femoral had taken place, or a congenital variety. As the patient was a lean person it might have been possible to recognize this collateral by especially searching for it, and also to find a difference in the pulsation in the two legs below the site of the abscess and so suspect the dangerous condition. Whether this more complete diagnosis would have changed the ultimate result is not very easy to decide. The abscess left alone, for fear of

Digitized by Google

embolism, finally would have emptied itself, provided that life lasted long enough. Such a postponement might have brought about a complete and solid closure of the femoral and so prevented the irreparable blockading lower down. But would the collateral mentioned above have been capable of sufficient enlargement to substitute the femoral intirely at a time when the collaterals lower down failed? It is at least very doubtful whether a complete diagnosis would have warranted a better treatment. Anyhow the examination of the arteries previous to the operation would have been an interesting one, and even if doubtful in its results, the disaster could at least not have taken by surprise the patient as well as the surgeon. If one only receives a hint of a thrombotic process he will not pronounce this operation so harmless on general principles.

Such errors in prognosis we do not fear so much as mistakes in treatment. To neglect them entirely sometimes the queries of patient and relatives safeguard against. For obvious reasons the physician must be quite sure if he gives an entirely unfavorable prognosis. Never to pronounce a case hopeless, for fear of error, is also a principle which cannot be maintained under all circumstances. Who has not seen recovery against all expectation, and who did not ask himself whether a more careful search might not have disclosed favorable signs? Let me relate the following history:

The patient was a man about 40 years of age suffering for a long time from an impermeable stricture of the urethra. He never listened to the advice of his physician, Doctor Jones of Leeseville, to have it operated upon, until he became very low with this and a subchronic pulmonary affection. Dr. Jones took the latter for a severe bronchial catarrh, perhaps with tubular inflammation. I found the patient with the bladder full, the urine constantly oozing from the penis, the scrotum red and swollen from irritation by the fluid, bedding always wet. Urine contained pus. The man was extremely emaciated and so weak that he could not raise himself in the bed. The temperature was 104°, hardly any appetite, the sputum was thick, nummular with bloody streaks, amounting to about one

Digitized by Google

teacupful in 24 hours. It was easy to approve the diagnosis impermeable stricture with catarrh of the bladder. Whether there was pyelitis was doubtful at first. As the urine cleared up soon after operation this affection, most probably, was not present. In regard to the pulmonary affection there was no agreement between us. I thought that it would not be anything else but tuberculosis, Dr. Jones denied. We examined frequently by auscultation and percussion and also microscopically, but never found bacilli or any definite signs of destruction. On the correct diagnosis impermeable stricture we were justified to do an external urethrotomy. The result was very satisfactory in regard to the local trouble. But generally the patient improved only slightly. The temperature was a little lower for a while and the patient gained some strength. The sputum remained unchanged, and further chest examinations and search for bacilli, etc., always yielded negative results. This negative evidence compared with the high fever and the patient's general condition seemed to me not strong enough to exclude tuberculosis of the lungs. Finally the patient lost his appetite entirely and his temperature rose to 105°. Always having denied that the condition was hopeless we now admitted it to be. With a great deal of interest we looked forward to the postmortem. A few days later (about five weeks after the operation) Dr. Jones telephoned that we could not get a postmortem. I was very much disappointed and asked indignantly for the cause of the refusal. The relatives always seemed very anxious to know the true character of the pulmonary affection. The explanation I got was entirely unexpected. "The patient is not going to die," was the reply, "he just waited for our unfavorable bulletin and has started to improve since." So he continued, and today he is perfectly well, without any pulmonary or urinary symptoms at all. How splendid a chance was lost for one of our modern supernatural healers, to show the insufficiency of medicine and surgery! How badly we were in need of a complete diagnosis!

To recognize the source of the disease as stated above is also part of a complete diagnosis. It may be of advantage to

Digitized by Google

the patient in so far that he may not contract again the same disease, for instance lead poisoning. There is another not less important point emanative from the knowledge of the source from which our patient became infected. The benefitted person is the physician himself, though the discovery of the truth at first glance may look rather detrimental to him. Operating in an aseptic field, it happens even now a day's that we get an infected wound. The temptation to connive, forget and make forgotten is great. Confronted with such an unfavourable result, it is good to remember that we learn most by mistakes. To prevent infection investigations have been made for years already to render the hands of the surgeon and skin of the patient aseptic. Today one method is praised as absolutely reliable, and tomorrow some one shows that it is not. Hot water, soap, brush, chemical substances in watery and alcoholic solutions or in statu nascendi have been recommended and condemned. No wonder if one gets tired reading this accumulating literature and is satisfied with a good though not infallible method. I have been pleased with watery bichloride solution for a long time, then I used the alcoholic solution. The following experience seemed to prove again the superiority and perhaps absolute reliability of the alcoholic solution in comparison with watery solution of bichloride. A few days after having operated for a severe staphylococcus albus osteomyelitis of the femur, I had to remove a carcinomatous mamma and to perform a radical operation for hernia in a boy. Hot water, soap, brush and bichloride alcohol were relied upon and primary union obtained in both cases. Having dressed in the meantime the osteomyelitis case, an operation for incarcerated hernia came up. I left in a hurry, on short notice, to operate at a farm house. The bichloride alcohol was forgotten and a watery solution used instead. The wound was infected and had to be opened on the third day, luckily without any further harm being done. A culture made from the pus showed staphylococcus albus. Dishes, instruments, dressings, silk and towels had been boiled immediately before operation. Staphylococcus albus is a widely distributed microbe and

Digitized by Google

might have lived on the patient's skin as well as on my hands or catgut. The boiled material could not very well be held responsible. Was it not better to omit further investigation and not to destroy the convenient doubt, giving quietly preference to the patient's skin as a source? But this most agreeable of the possibilities was excluded as it clearly could be seen that the infection commenced deep in the wound, not in the stitch canals or in the superficial parts of the incision. Now the bacteriological examination of the catgut, sterilized by myself, became a commanding necessity It proved to be sterile. My hands remained as the next and the staphylococcus albus osteomyelitis the remoter source. The assistant had done nothing but hold retractors. Alcoholic solution of bichloride had rendered the hands sterile exposed to same infection three times, and watery solution had not! It was a natural and satisfactory conclusion to rely in the future upon the former. But this more enforced than voluntarily undertaken research had aroused again the interest in hand disinfection. The more recent papers on the subject all agreed that chemicals are not so reliable as had been claimed, and that gloves gave a far better protection. Another not less interesting and perhaps as valuable fact was discovered in the literature of disinfection. Prof. Miculicz in Breslau had examined (bacteriologically) every active hand after disinfection immediately before operation. Only the nurse in charge of dressing material, who never touched anything that had been in contact with a patient, had invariably aseptic hands after disinfection. The other members of the operating staff, who had to dress wounds, remove stiches, open abscesses, etc., occasionally did not succeed in rendering their hands aseptic. Many probably have become aware of these facts in a different way without being led to them from efforts to complete some diagnosis. But what happened here happens surely elsewhere, that a continued diagnostical research will awaken or reawaken interest in neglected or overlooked subjects.

As we realize the value of the complete diagnosis in searching for cause and origin of ailments we can expect the

Digitized by Google

same by following up the disease into its farthest branches. Such an investigation generally cannot be carried out in the living subject, its fields are the parts removed by operation and the dead body. The classification of a tumor or the determination of the character of granulations falls under the head of correct diagnosis. An investigation, whether a new growth is completely removed, aims at deeper knowledge as a correct diagnosis demands. To determine how far our operation has been complete is as, or even more, important a point than to classify a tumor. The physician, who has turned over his patient to the surgeon, wants a prognosis based upon specified facts, and will not be satisfied with one based on general statistics, as he can find them in every text book. But it has been proven before that a complete diagnosis warrants a better prognosis, and these remarks therefore look superfluous. The reason to discuss this part of complete diagnosis indeed lies elsewhere and will clearly be recognized by going over the history of the operation for carcinoma mammae. This at first was restricted to the tumor or the mamma alone, then the removal of axillary tissue was pronounced necessary, next the superficial layers of the pectoralis major, third, this entire muscle with its minor companion and of late Halsted urges to remove the supraclavicular tissue containing the glands in every case. In all the single stages of this developing operation the originators of progress based on and supported their suggestions by a series of cases completely diagnosed as to the limits of the growth. If for instance Halsted cannot show by microscopical examination that in a considerable number of cases the supraclavicular glands are infected where they appear to be healthy to the examining finger, not many will follow him in aggravating the operation by this new addition. The value of such investigations is indisputable, but the amount of work necessary nearly excludes every one from accomplishing it, who has not an institution behind him like John Hopkins Hospital, with its large number of cases and of assistants willing and able to do the examinations conscientiously, a fact

Digitized by Google

not deterorating the complete diagnosis. Goods requiring skilled labor and time to produce them are highly valued.

The chances to fully appreciate the complete diagnosis offered by the postmortem may be similar to those just spoken of. More frequently they seem to be different. The postmortem generally is undertaken by the practicing physician or surgeon to corroborate or establish a correct diagnosis. If there is no doubt in this respect, outside of scientific institution, examination of the dead body, as a rule, is not undertaken for obvious reasons. Sometimes we open the cadaver only far enough to allow the correct diagnosis. If this cannot be made macroscopically a piece is removed for microscopical examination. A complete diagnosis certainly cannot be made in this manner. More time and work is needed, and spending it we will get reward and satisfaction sometimes against all our expectations. Generally we are not alone at the postmortem. Other physicians are invited and their presence may prevent us from dealing superficially with or neglecting points of interest. So we get, to a moderate extent, the co-operation alluded to above, which makes the large hospitals the centers of medical science, and will bring us nearer to this high standard. As we rarely are able to secure the help of a well trained pathologist, physician and surgeon can supplement each other advantageously to both. Here an example may be in place. The postmortem was made on the body of a man about 50 years of age, who had been in good health until one year before he died. From that time he lost his appetite and slowly failed. He never vomited except once, not very long before his death, when he passed through a regular attack of illness. There were never cerebral or pulmonary symptoms, never albumen, sugar or anything else abnormal in the urine. His most prominent complaint was backache. Later jaundice appeared, clay colored stools and a sausage shaped mass to the right of umbilicus could be felt. I saw the patient once in consultation with Doctor Flinterman of Detroit. We agreed that operation was not advisable. The patient died. The result of the postmortem was a primary cancer of the pancreas, apparently involving the

Digitized by Google

whole organ, multiple metastases in liver and small intestine, the latter causing as many incomplete strictures of the canal. My surgical interest centered in this dissemination and it occupied all my thoughts. It was fascinating to search for an erosion of a branch of the portal vein or the mesenteric artery; the former disseminating tumor particles over the liver, the latter over the intestinal loops. But the mass of adhesion and ulceration did not offer much hope to complete the diagnosis in this direction. The same seemed to be the case with another point to which attention was called by some one present. Why had there been no sugar in the urine in spite of the pancreas being entirely destroyed. But I believe that here, against expectation, further research has led to a fuller understanding. Examining the pancreas tumor microscopically, I found that distributed in the cancerous masses little islands of normal gland tissue were left. The idea suggested itself at once that these remnants might have been able to sustain the function of the organ in preventing diabetes. But another point seemed to be on contradiction with this acceptable explanation. The failing of the patient long before any hepatic symptoms appeared indicated that the pancreas had lost its digestive power in the early stages of the disease. If these little isolated patches of gland tissue were able to fulfill one of the pancreatic duties why could they not fulfill the other. An explanation of this contradiction we can only give if we know how the normal pancreas performs these two functions. The digestive influence exerted by the pancreas is fairly well known. The juice formed by cells flows through the ducts and empties into the ducdenum. In our case it clearly could be seen that the ducts were destroyed and therefore the juice could not reach the intestinal canal, even if it was produced in sufficient quantity. The other process, the prevention of glycosuria by the normal pancreas is not known. The explanation is sought by means of a theory. According to this; the pancreas produces by internal secretion a substance which, circulating in the blood, enables the tissues to burn the sugar and therefore prevent its appearance in the urine. In our case only the ducts leading to the

Digitized by Google

duodenum were destroyed, not the blood vessels. Nothing could prevent the blood circulating through the remnants of normal gland tissue, to load itself with this hypothetic substance. Whether this is truth or not may be doubted. Nevertheless the attempt to complete the diagnosis in our case is valuable. The above theory has been put to test. If it cannot explain such a case it is weakened at least, if one cannot say disproved. A theory can lead the investigator in the right direction and also mislead him for a long time. The earlier a wrong one is abandoned the better for progress of science. To this end we help in collecting material by our efforts to make complete diagnoses. It may be that in some corner of the scientific world the relation between pancreas and diabetes has already been proven to be a different one. I do not claim to be up to date on physiologic chemistry. My aim is to illustrate how medical science may profit if every one of our profession investigates his cases as far as his ability permits him to go.

If no other advantages would grow out from such attempts, this very search for the truth will elevate us to a higher standard and is satisfactory in itself.

Digitized by Google

* PELVIC DISEASES IN WOMEN AND INSANITY.

W. P. MANTON, M. D.
Detroit.

The student of the history of insanity cannot but be impressed by the fact that, until within comparatively recent times, all forms of cerebral disease were treated without regard to causation, pathology or the requirements of the individual case. As natural sequence, this disregard of the etiological factors in the production of mental alienation, and the confusion arising from ignorance of morbid processes occurring within the cerebral structures, led to the employment of most absurd forms of internal medication for the relief of mental disorders, and to the practice of ingenious, as well as cruel and diabolical methods for bodily subjugation and discipline.

It is only necessary to mention the "circulating swing" of Darwin, a device by which the unfortunate patient "was rotated at various rates up to one hundred gyrations a minute;" the "treadmill," which was walked with ever increasing anguish and despair; and the "bath of surprise," into which, all unsuspecting, he was suddenly plunged to emerge "half drowned and half frightened to death," to recall to mind the horrors of the some-time mad-house and the bitter fate of its imprisoned victims. Shocking as such inhuman treatment must appear when directed toward the coarser and more vigorous constitution of the man, who can picture the agony of the torture when applied to the more susceptible, sensitive and delicate organization of the woman?

*Address on Gynecology and Obstetrics, Michigan State Medical Society, Kalamazoo May 4 and 5 1899.

Digitized by Google

Stripped to the skin and shackled to a bed of coarsest straw, restrained so well in every part that even breathing was repressed, neglected indefinitely to wallow in increasing filth, and made the butt of rude, obscene and vicious jests by those in charge, the wonder is, not that some few women more hardy than the rest lived to recover reason and regain their freedom, but rather that all did not miserably perish from the brutal usage.

Such, however, was the nature of asylum treatment of the insane abroad, and to a large extent in this country also, when about the year 1854, through the instigation of Miss Dorothea L. Dix, the institutions of Scotland were subjected to official investigation. The influence of this movement was manifested over the entire civilized world, and resulted in a more rational and humane management of insanity cases. Indeed I am inclined to attribute the real advancement of psychiatry to date from this period; for when the insane ceased to be considered as a class only, individualization created an interest in the psychic phenomena displayed, and led to the beginning of a more careful study of brain disorders and to a more systematic, intelligent and scientific classification of cerebral diseases.

In spite of the fact, however, that the surroundings of the insane have been gradually improved, their lives rendered more comfortable and severity of treatment abolished, it was long before the influence of bodily disease upon the human mind was given especial consideration. A number of years ago I entered the plea (1) that the state or individual has neither the legal nor the moral right to house, clothe and feed these mental unfortunates, and at the same time deny them relief from bodily suffering which can be ameliorated or cured through medical or surgical intervention. And particularly is this true in the instance of the female insane suffering from abdominal and pelvic disorders—conditions which, as a rule, are readily amenable to treatment, and which, on the alienist's own showing, are more prevalent among the insane than

(1) A plea for the amelioration of insane women suffering from local disorders.—Am. Gynecological Journal, 1893.

Digitized by Google

among women of sound mind. In a recently published article presenting some statistics gathered from my own observations at the Eastern Michigan Asylum, it appears that abdomino-pelvic disease is present in more than eighty-one per cent. of the women confined within our asylum walls, (2) and the reported investigations of others go to show that my figures fairly represent the frequency of these disorders among the insane of other states.

In 246 consecutive postmortem examinations made at the London County Asylum by J. G. Gordon-Munn, pelvic disease was found in only 33 instances, (13.9 per ct.) It must be remembered, however, that many of the local diseases discovered in the living are of a temporary nature, and that while the patient may suffer acutely during their existence, little or no pathological evidence of their presence may be found after death. (3.)

If, as it must be conceded, local morbid processes are capable of producing so much distress and suffering in women whose minds are unaffected, can it be denied that, in the majority of instances, the insane female is not as susceptible to somatic pain in the presence of similar causes, or that such conditions have no influence on the course of the mental malady, or that they do not tend to general physical deterioration? The intimate relationship existing between the sexual apparatus in woman and the higher nervous centres has been so conclusively demonstrated, both anatomically and clinically, as to require no further argument; and the fact is established that not only may disordered conditions of the uterus and its appendages give rise to insanity, but also that mental derangement may be a sequel of operations performed upon the local organs of the same. If, as the observations of Curatulo and Tarulli on the functions of the ovaries appear to show, these organs secrete a substance which favors oxydation of the carbohydrates and fatty and phosphorized matter in the economy, chemic changes which are essential to the well-being of woman during active sexual life, it is

(2) The frequency of Pelvic disorders in Insane Women.—Am. Journal, Obstetric, January 1899.

(3) Journal of Mental Science, January 1899.

Digitized by Google

quite reasonable to suppose, as suggested by Hobbs, that as the result disease of these glands, the secretion may become baneful and produce toxic effects, especially on the nervous system. It is obvious that continued irritation by such a poison circulating in the blood would tend to engender both nervous and mental impairment in the sane, and augment a cerebral disorder already existing. (4.)

Yet, in spite of accumulating evidence, the psychiatrist has, until within the past few years, been averse to acknowledging the significance of these facts, and has generally denied the existence of pelvic disease to any extent among his female patients. If the truth were told, the reason that pelvic disease was not discovered was because it was not looked for, although not infrequently its presence was so patent that even a local examination would be uncalled for.

When in 1864, Dr. Horatio R. Storer in his report on insanity before the American Medical Association pointed out the desirability of consulting boards to institutions for the insane, especially for the purpose of determining the relation between pelvic disorders in women and mental derangement, his suggestion was met with the most bitter denouncement and regarded as an insult, reflecting upon the ability of those engaged in asylum management. So strong was the opposition to this so-called outside interference, that the matter was dropped until about a decade ago when Michigan, so frequently found in the van of progress, took the initiative in two of her great institutions for the care of the insane. From this beginning interest has spread to other asylums in the United States, Canada, Great Britain and the continent of Europe, and today we find in current literature frequent reports of the excellent work done along this line both at home and abroad.

It is to Michigan, however, that the thanks of the women of the world are due for first instituting systematic efforts for the amelioration of their insane sisters suffering from local disorders.

(4) La Secreziona Interna delle Ovarie, Rome, 1896.

Digitized by Google

It has been urged that the gynecologist in his attempts to bring about a change in point of view regarding insanity and pelvic disease, has exhibited too great zeal and jumped at unwarranted conclusions, and it must be confessed that the charge in many instances is undoubtedly true, as well as that too hasty and too radical measures were adopted by a few at the beginning of this reform. It is therefore not surprising that the alienist maintained a rigidly conservative attitude and refused his assistance and countenance when it was proposed to cure all insanities by means of a wholesale surgical onslaught, or that he looked with suspicion upon the man who, ignorant of mental pathology and disease, sought to restore the shattered brain through the ablation of remote and healthy structures. But radicalism on the one hand and conservatism on the other have taught valuable lessons, have served to raze the barrier which formerly existed between gynecologist and mental expert, and have prompted each to regard the subject somewhat through the others eyes, so that today the advancement of knowledge in mentopelvic pathology, if I may be allowed to coin the term, is the result of their united and co-operative efforts.

But although the relationship existing between the higher nervous centers and the pelvic organs in woman has been clearly and satisfactorily demonstrated, and although it is now admitted by all that disease of the latter may give rise to mental derangement, the curability of insanity by local operative measures is still, and I believe must always be, an open question. That mental cure has followed surgical procedures is beyond dispute, but that all, even the acute, forms of insanity associated with utera-ovarian disease, can be remedied in this way experience fails to prove. While now and again operative measures will be attended by the most happy results in the relief of the mental affliction and cause and effect appear to be conclusively exampled, failure will often follow in, apparently, most favorable cases, and lead to disappointment and distrust.

It is important, therefore, in our investigations regarding the relation of insanity and the pelvic diseases of women,

Digitized by Google

that we do not lose sight of the chief object of all our endeavors, the bringing of relief to the pain-racked bodies of these unfortunate bearers of a blotted brain, and whether the mind diseased is capable of restoration or not, let us do all that within us lies to remove somatic suffering and bodily distress.

Digitized by Google

THE PROBLEM OF INFANT NUTRITION.

CHARLES GODWIN JENNINGS, M. D.,
Detroit.

I have first to thank the Section in Medicine for confiding to me the selection of the subject for the annual address in Medicine and for the honor of presenting it to the Society.

It is not the object of an address of this character to announce to the medical world through the society individual discoveries in pathology, experimental or clinical medicine; but rather to review and criticise the thoughts and works of others on some subject or correlation of subjects of immediate interest to the profession at large. From this standpoint I believe that no apology is necessary for bringing before you at this time the "Problem of Infant Nutrition."

Compared with some of the great problems of pathology and therapeutics of the last few years, this may seem to some trite and commonplace, but to the physician who thoughtfully studies the pathology of the early life, the direct relation of infant nutrition to infant mortality and morbidity, and more remotely the relation of infant and child nutrition to the physical well being and longevity of adult life, the problem of proper nutrition of infants and children reveals itself as one of the most important questions before the profession today.

Vital statistics tell us plainly of the excessive mortality of infant life. In Detroit, for the year ending July 1, 1898, 35 per cent of the total deaths were under the age of 5 years, and 25 per cent. under the age of one year. Most of the deaths under one year are due to nutritive disorders directly or indirectly the result of improper feeding.

Digitized by Google

That this terrible mortality rate is to a great extent preventable is shown by the experience of physicians in private practice. In the Presidential address before the American Pediatric Society in 1898, Dr. L. Emmett Holt stated that "of 151 children, who, during the past eight years have been under my care through practically their entire infancy, not one died before reaching the end of the second year. This is still more significant when we consider how they were fed; only thirty of the number were breast fed, either by the mother or wet nurses through the greater part of the first year; thirty-three were partly nursed and partly fed, nursing being usually continued for two or three months alone, after which the bottle was added; ninety were entirely bottle fed. This certainly makes a good showing for artificial feeding and indicates very clearly that among the class of people where artificial feeding can be properly done, it was extremely satisfactory."

From inquiry among physicians in New York in the same field of practice, Dr. Holt further concludes that "in the well-to-do classes, with the best care, the mortality from all causes during infancy does not exceed two or three per cent. as against a general mortality for this period among all classes of about twenty per cent. These are most hopeful signs and show the possibility of a very great reduction in infant mortality everywhere with the better understanding of all conditions, but especially the infant feeding."

The effects of a pernicious diet do not cease with infancy. A child may rally from an infancy made wretched by continuous indigestion, but he survives to pass a puny childhood, and he reaches adult life imperfect in physical development, and finds himself in the full current of life's occupation, struggling for pre-eminence among his fellows with an indigestion that shortens his endurance or impairs his judgment or temper. Thus the bilious attack of infancy and childhood becomes the sick headache which takes many months from the activity of adolescence and early adult life, and in later manhood to be exchanged for gout or arterio-sclerosis, with

Digitized by Google

their long train of pathological events that cuts short life or makes a burden of the declining years.

The necessities of modern urban life have imposed upon childhood the mental strain that should come only with mature years. In-door life, with long hours of school study and the strain of frequent examinations have replaced rural freedom and the easy going healthful method of the country school. Abundant exercise and rugged health flout at dietetic indiscretions and excesses, but when all the nutritive functions, handicapped by the defective excretion that comes with lack of sunshine and exercise are strained to supply an overworked brain, only a diet well balanced in its ratio of fats, carbo-hydrates and proteids, and adapted in quantity, quality and digestibility to the needs of the individual child can save him from nutritive disaster.

Rotch recognizes in childhood three nutritive periods.

The first period consists of the first twelve months. The second period includes the second and third years, and the third period the remaining years of childhood.

For the first period the natural food of the child is its mother's milk, and when this is abundant and of proper quality, the problem of nutrition for this period is settled or a wet nurse may be a satisfactory substitute for the mother.

In the absence of the milk of the mother or a wet nurse the problem is one of substitute feeding. To the question of substitute feeding will be devoted the bulk of this address. From the results obtained by Holt, quoted above, and by others who represent the best modern knowledge of infant dietetics it would appear that the problem of substitute feeding were fairly well solved. The working details of infant dietetics would here be out of place, and I shall endeavour to place before you only a brief resume of the evolution of infant dietetics and to outline the principles which underlie success.

American physicians have been foremost in the study of infant feeding and it is to them chiefly that the profession is indebted for a system that is scientifically correct and clinically successful. Jacobi, Meigs, J. Lewis, Smith, Rotch, Holt,

Digitized by Google

Starr are among those who have been the leaders in this line of investigation.

The perfect adaptation of the mother's milk to the child's nutrition has always been patent to the most casual observer, and it has been the aim of all investigators in infant feeding to produce a food that would represent in its digestibility and nutritive value woman's milk. In the early analyses of milk imperfect analytical methods gave misleading results and these have been responsible for many of the mistakes of the past. Cheadle, a prominent English writer, as late as 1894 deduces his scheme of diet from analyses of human milk that are greatly at variance with those of Meigs, and the accepted results of investigators since his time.

The younger Meigs employed improved methods and as early as 1882 published results that have stood the test of later investigations. Writing on this subject at this time he says: "I wish to be clearly understood as believing that the figures of Vernois and Becquerel and of their followers are totally wrong, and that deductions from their results are largely accountable for the fact that at the present day so many young infants are fed upon cow's milk, pure, which contains an amount of casein their stomachs are unfit to digest; and I further believe that if physicians in general could be taught to know that fresh cow's milk properly watered, with cream and sugar added in due proportions, is more like human milk than any other food at the present time known, many thousands of infants who now die would live to be men and women."

To again show how far behind American Medicine in the subject of child's diet were foreign authors, Eustace Smith, the most prominent English physician in his department devotes no chapter to infant feeding in his book published the same year with that of Meigs.

The elder Meigs by clinical methods found that certain proportions of milk, cream, milk sugar, and lime water were best adapted to the average infant's digestion and nutrition and with the aid of his son, Dr. A. V. Meigs, perfected the well known "Meig's Mixture.

Digitized by Google

Fat	3.50
Sugar	6.66
Proteids	1.21
Salts	.25

The most approved milk modifications of the present day are but perfections in the detail of their methods.

Jacobi early turned his able mind to the question of infant dietetics, and was one of this country's pioneers in this field of scientific infant feeding. Thirty-five years ago, almost before the discovery of micro-organisms, he advocated sterilization of infant's food in his lectures and writings, and since that time a large part of his literary labors have been devoted to questions of infant diet and hygene.

Bacteriology added a most important factor to the progress of the development of scientific infant feeding. Lister demonstrated that cow's milk as it comes from the udder is sterile, but with the ordinary dairy care quickly becomes infected.

In 1886 Soxhlet published his investigations advising the sterilization of infants' foods and devised apparatus for sterilization and for feeding. Caille of New York introduced Soxhlet's teaching into the United States. About the same time Ernest of Boston was successfully feeding sick children with sterilized milk, and Rotch (1887) devised a simple steam sterilizer. Jeffreys, Eschevich, Brieger, Booker and others studied the bacteriology of milk and of the infant intestinal contents. Their researches and more modern study of infantile diseases have demonstrated that the gastro-enteric diseases of infancy and some of the acute infections are the result of infection through the medium of the food.

Sterilization destroys microbes, and it is for this purpose and for no other that infants foods are subjected to this process. It is but a single factor in the development of a suitable infants food, but too often it is considered the one essential feature.

Ricket, scurvey and other nutritional diseases have been attributed to the use of sterilized milk; confirmatory evidence that these diseases are so produced is as yet wanting. Pas-

Digitized by Google

teurization at low temperature, 160 degrees F., offers similar protection against the introduction of germs, and this process is advocated by some of our best authorities as a measure that is free from some of the actual and supposed objections to sterilization.

While further clinical experience is necessary to determine the relative advantages of sterilization and pasteurization, we must look upon the introduction of these processes as one of the most important factors of modern successful infant feeding.

The labors of Dr. T. M. Rotch of Boston have given to the profession the most recently developed factors in the art of successful infant feeding. The work was perfected with the colaboration of Mr. G. E. Gordon, a dairy man of wide experience. The method of Rotch aims to effect a recombination of the fats, carbo-hydrates and proteids of cow's milk, so as to produce mixtures yielding any desired percentage of each of these essential ingredients. While mother's milk is to be taken as the type of what such a mixture should be, it is possible by this synthetic process to vary the percentage of any or all of its three elements to meet any desired modification.

Rotch followed the methods and results of Meigs, and in the article "Infant Feeding" one of his earlier writings (Keating's Cyclopedia, 1889) he recommends the Rotch's Mixture, a modification of the Meig's Mixture, imitating more closely the composition of the average woman's milk. Rotch's Mixture has the composition :

Fat	4.
Carbo-hydrates	6.26
Proteids	1.11
Salts	.21

Clinical experience had shown that a single combination of fats, sugar and proteids, like either Meig's or Rotch's Mixture, was adequate neither for the nutrition of all infants of the same age, nor for that of a given infant at different ages.

Rotch's work further included extensive researches into the composition of cow's milk and woman's milk in numbers of

Digitized by Google

individuals, and under all conditions. From these researches it was shown that "human milk of normal quality and proving to be equally nutritious to the special infants that are fed on it, may vary considerably in the percentage of all and in the combination of these percentages," and he presents observations on the effect of putting healthy infants to wet nurses, themselves nursing thriving infants, but with different compositions, and he found that the digestive capabilities of infants differ just as do those of adults, and that nature provides a number of varieties of good human milk adapted to the varying idiosyncrasies of infants."

With a knowledge of these facts it was plain that a system of infant feeding to be generally successful must be susceptible of a great number of chemically exact modifications. Each infant must be given the percentage of fat, sugar and proteids that its nutritive peculiarity demands; that the physician in prescribing an infant's food should think in percentage of fat, carbo-hydrates and proteids, modifying them to suit the age and nutritive demands of the individual child.

The fundamental principles of infant feeding which must be constantly born in mind by the physicians in his selection of an infant's food, and which form the basis of scientific feeding, and thus stated by Holt:

"1. The food must contain the same constituents as woman's milk, viz., fat, carbo-hydrates, proteids, inorganic salts, and water.

2. These constituents must be present in about the same proportions as in good woman's milk.

3. As nearly as possible the different constituents should resemble those of woman's milk, both in their chemical composition and in their behavior to the digestive fluids.

4. The addition to the food of very young infants of substances not present in woman's milk (*i. e.*, starch) is unnecessary, contrary to the best physiology, and, if used in any considerable quantity, may be positively harmful.

From a comparison of the chemical composition of woman's and cow's milk it will be seen that cow's milk contains all

Digitized by Google

the elements necessary for the preparation of an infant's food, although they are not present in the proper proportion.

The average compositions, the results of the latest researches, which are used as the basis of the modification of cow's milk for infant feeding, are:

	Woman's Milk.	Cows' Milk.
Fat	4.00	3.50
Carbohydrate	7.00	4.30
Proteids	1.50	4.00
Salts	.20	.70
Water	87.30	87.50

Cow's milk, therefore, contains about the same percentage of fat, a great deficiency of sugar and a great excess of proteids and salts.

The problem to obtain a food resembling woman's milk by the modification of cow's milk is to *maintain* the fat percentage, *increase* the sugar and *diminish* the proteids and salts. The composition of ordinary gravity cream is:

Fat	16.00
Sugar	4.00
Proteids	3.50

It contains practically the same percentage of sugar and proteids as milk, and is simply a super-fatted milk. With milk and different percentage solutions of milk sugar, any combination of fat sugar and proteids can be made, for example:

2 oz. milk,
4 oz. cream,
18 oz. 7 per cent. solution of milk sugar,

will give a food with an approximate composition:

Fat	3.00
Sugar	6.00
Proteids	1.00
Salts	.20

As stated above, clinical experience has shown the indigestibility of the casein of cow's milk even when supplied to the infant in the percentage that exists in woman's

Digitized by Google

milk. The fat also of cow's milk appears to be less digestible than the fat of woman's milk, and experience has shown that young infants demand food with a percentage of fat and proteid much less than is found in woman's milk, and not until they are six or seven months old can a modified milk be given them similar in composition to woman's milk.

From these essential facts Rotch developed his series of formulas adopted to the nutritive demands and digestive ability of the average infant from birth to the end of the first year. Since Rotch's publication minor modifications of his formulas have been made by different observers.

FORMULAS.

	Formula I. 1st and 2d day. Per cent.	Formula II. 3d to 7th day. Per cent.	Formula III. 2d & 3d weeks. Per cent.	Formula IV. 2d and 3d mos. Per cent.	Formula V. 4th mo. Per cent.
Fat....	.00	2.0	2.50	3.50	3.50
Sugar..	5.00	6 00	6.00	6.00	6 00
Proteid.	.00	.60	.80	1.00	1.25

	Formula VI. 4th and 5th mos.	Formula VII. 6th, 7th, 8th mos.	Formula VIII. 9th, 10th, 11th mos.
Fat....	4.00	4.00	4.00
Sugar..	6.00	7.00	6.00
Proteid.	3.50	3.00	3 50

I present a series of weight charts to illustrate graphically the effect of a change from diluted cow's milk with added artificial foods and cereals on a number of infants. They were in an institution under the same hygienic influence and the change of food was made on the same day with all.

To Rotch should be given the credit for perfecting a system of feeding that can be adapted to the digestive abilities of the feeblest infant, and which has proven to be one of the greatest advances in infant dietetics of recent years. Rotch's work is thoroughly scientific. It substitutes accuracy for guess work and teaches the physician always to think in percentages of fat, sugar and proteids, and to adapt his food prescription to the individual infant. While his complete system of feeding demands the exact methods of a well conducted milk-laboratory and the entire control of the milk supply, it may be modified to suit the localities, social conditions and individuals. The scientific principles on which it is

Digitized by Google

founded and the essential of its detail must form the basis of all successful infant dietetics.

As an element of the artficial food of the infant under the age of one year, starch as found in one or a combination of the cereals has long held an important place. Modern authorities are somewhat in variance in their opinions of the age at which starch feeding should begin, and to what extent it should supplement or replace other carbo-hydrates in the food.

For thirty years Jacobi has advocated the dilution of the milk with decoctions of the cereals. J. Lewis Smith was a firm advocate of cereal addition, and many other able clinicians in this country and abroad have found cereals a useful element in infant feeding.

Tradesmen ever on the alert to invade the domain of science have given their powerful influence to aid the wide-spread use of cereals, and at the present time cereal feeding is the almost certain resort of the unadvised mother and the average practitioner. Infant physiology teaches that the amylolytic secretions of the salivary and pancreatic glands are not established in the early months of life. Nature supplies carbohydrates to the infant ready for absoption as milk sugar. Amylolytic ferements are therefore unnecessary.

Salivary secretion begins at about the third or fourth month and not until the latter months of the first year is an abundant and active secretion present. It has, however, been experimentally determined that a certain small amount of starch can be digested by even the youngest infant. Jacobi's observations of results with the milk mixtures of Rotch's led him to think that for some infants they lack tissue building properties. That the bones and muscles, particularly, form too slowly, and that this deficiency can be corrected by intelligent cereal additions.

From these facts it is but rational to conclude :

1. That cereals in great quantities should not be added to the diet of an infant under the age of one year.

2. That after the sixth or seventh month cereals in moderate quantity may be given in milk mixtures.

Digitized by Google

3. In the early months of life, while abundant domestic and professional experience shows that certain infants may thrive on, or perhaps, in spite of, cereal feeding, it should be the rule to add cereals to the food only with the greatest circumspection and in the smallest quantity.

Cereals then form a most useful and often necessary element of the food in the latter part of the first year. Their composition and the limits of their digestibility and utility must be constantly borne in mind. To overwork the feeble, developing starch-digestion apparatus in early infancy may be attended by the gravest results, not only immediate but remote. Overfeeding with starch is one of the most frequent errors in infant dietetics and the chronic indigestion of infancy and childhood can usually be traced to it. And it is not improbable that the frequency of starch indigestion of adults at the present time is largely due to the irreparable damage done the amylolytic glands by prolonged overwork during the developmental period.

Directly related to cereal feeding is the subject of the artificial foods of the trade.

Their place in infant dietetics must be determined by their chemical composition and properties. The published analyses of Teeds, Rotch, Holt and others are accessible to all.

The principle foods in the market may be divided into three classes :

1. The farinaceous foods.
2. The malted foods.
3. The milk foods.

Comparing the analysis—

CEREALS.

	Wheat Flour.	Oat Meal.	Barley Flour.
Fat	1.00	5.50	1.00
Carbohydrates	81.00	64.00	81.00
Proteids	7.50	12.50	5.00
Salts	2.80	3.00	2.00
Water	9.00	15.00	10.00

Digitized by Google

	RIDGE'S FOOD.			IMPERIAL GRANUM.	
	PER CENT.				PER CENT.
Fat		1.10			1.00
Carbohydrates	Sol.	3.00)		Sol.	2.00
	Insol.	78.00)	81.00	Insol.	76.00
Proteids		12.00			14.00
Salts		.50			.40
Water		8.50			8.00

in round numbers of three of the most frequently used farinaceous foods with the cereals, wheat, barley and oat meal, it will be seen that these foods differ in no material way from the cereals. Comparing their cost it will be found that one pound of Imperial granum costs on the market 75 cents; the best cereals from 5 to 3 cents. Critical examination shows them to be partially cooked, convenient, but very expensive cereals.

Analysis of the malted foods show them to be cereals changed somewhat in their composition, the chief change being the transformation of the insoluble starch into soluble glucose. The fat of the cereals has been mostly removed by the process of manufacture.

	MELLIN'S FOOD.		HORLICK'S FOOD.	
		PER CENT.		PER CENT.
Fat		.30		.35
Carbohydrates	Sol.	82.50	Sol.	77.00
	Insol.		Insol.	
Proteids		10.70		10.50
Salts		3.00		2.00
Water		4.00		10.00

The addition of one of these foods to milk is practically but the addition of a soluble carbo-hydrate. Mellin's food costs on the market $1.25 per lb. Milk sugar 20 cents, cane sugar 5 cents. While one of these foods may be a useful carbohydrate it must be considered a very expensive one.

The milk foods reveal what they are by the study of their composition.

	MALTED MILK.			NESTLE'S FOOD.	
	PER CENT.	DILUTED PER CENT.		PER CENT.	DILUTED PER CENT.
Fat	2.66	.39		5.58	.76
Carbohydrates	Sol. 67.91	10.18	Sol.	45.57	6.38
	Insol.		Insol.	29.95	4.19
Proteids	15.18	2.28		11.04	1.54
Salts	3.34	.50		1.72	.24
Water	2.20	86.65		1.50	86.89

Digitized by Google

Glancing over the analysis of these foods and the analyses of them as they are prepared for administration the most palpable defect in them as compared to the perfect infant's food, woman's milk, is the serious reduction in the fat percentage. Fat is essential to tissue-building and to the absence of fat in these foods can be attributed the rickets and other nutritional defects that so frequently attend their injudicious use.

The practicing physician finds that sometimes in difficult cases, or for the sake of convenience they can be given alone or added to milk with benefit. When so used with a full knowledge of their composition and nutritive value, they may replace the cereals in the latter months of the first year, but they cannot be what is always claimed for them a perfect substitute for mother's milk.

The demands of nutrition during the second nutritive period are somewhat different from those of the first year. Tissue-building is reduced and muscular and cerebral activity assume prominence. To meet these demands there should be a gentle approach to the food of adult life. The time is too limited to more than touch upon the food problem of childhood.

A physiological child at the end of the first year is taking from 40 to 50 ounces of a food containing 4 per cent. fat, 7 per cent. sugar and 1.5 per cent. proteids. The perfect food of adult life contains 3 per cent. fat, 15 per cent. carbo-hydrates, and 5 per cent. proteids. To reduce the fat, and increase the carbo-hydrates and proteids to meet the physiological demands of the child is the problem presented to the physician. The child's instincts cannot be trusted, and the mother's judgment is too often at fault. So it is the physician's duty to prescribe and direct the diet during the first years of childhood.

I have thus in the briefest possible manner outlined some of the essential facts of infant dietetics and nutrition, not to attempt to formulate a plan of feeding, but to bring before the society a subject of the greatest importance to the profession, the family and the state.

Digitized by Google

The trend of medicine is to the prevention of disease. The study of infant dietetics is a study in preventive medicine. Under the influence of state, municipal and domiciliary hygiene, infectious diseases have diminished or disappeared. Relieved of the burden of the acute infections the head of the family and his physician can devote their energies to the physiological care of the children of the household.

Among intelligent people the growing interest in infant and child diet and hygiene is manifest by the extensive circulation of special magazines and popular treatises upon these subjects. In a considerable experience in consultation, hospital and dispensary practice I have found the average practitioner has not had his interest in these subjects aroused in equal degree. Because of the neglect of this subject by the rank and file of the profession as well as because of its importance I have addressed you upon it today.

In large communities certain practitioners with unusual opportunities and special adaptability have become specialists in diseases of children, but the infants who can be cared for by the specialist are few indeed. It is the family practitioner who must care for almost all of them.

Every family practitioner then should be a specialist in infant dietetics. He has the ability, and the opportunity; he has the clinical material and he owes it to his patients and to the state to give to the infants confided to his care the benefit of a diet that will not only preserve their lives, but will permit them to reach adult life with vigorous digestions and perfectly developed bodies and brains.

Digitized by Google

SECTION ON SURGERY AND OPHTHALMOLOGY.

OFFICERS.

E. B. SMITH, Detroit, Chairman.

C. B. STOCKWELL, Port Huron, Secretary.

FRITZ MAASS, Detroit, Orator.

SECRETARY'S MINUTES.

FIRST DAY, THURSDAY, MAY 4th.

2 O'CLOCK P. M.

The section was called to order by the chairman. The following papers were read and discussed :

Septic Diseases of the Brain and its Membranes. Diagnosis from the standpoint of the Oculist and Aurist, Eugene Smith, Detroit.

The Employment of Gloves as a Recent Factor in Operative Surgery, Schuyler C. Graves, Grand Rapids.

Traumatism of the Male Urethra, with report of two cases, Charles W. Hitchcock, Detroit.

Urethral Diseases and Marriage, Frederick W. Robbins, Detroit.

Tubercular Osteo-Myelitis, Angus McLean, Detroit.

Surgical Appendicitis, Hal. C. Wyman, Detroit.

SECOND DAY, FRIDAY, MAY 5th, 1899.

8:30 O'CLOCK A. M.

The section was called to order by the chairman. The following papers were read and discussed :

Cyst of the Pancreas following Trauma, J. Van der Laan, Muskegon.

Sutural Closing of Visceral Wounds, Frank B. Walker, Detroit.

Why some Bad Cases of Appendicitis Recover without Operation, J. Henry Carstens, Detroit.

A Preliminary report on Non-septic Post operative Leucocytosis, Herbert M. King, Grand Rapids.

Digitized by Google

AFTERNOON SESSION—FRIDAY, MAY 5th,

Meeting held at the Michigan Asylum for the Insane. The following papers were read:

Diseases of the Cavities of the Nose an important factor in producing Affections of the Eye, Albert E. Bulson, Jackson.

Correction of Divergent Strabismus by a new method and new instrument, D. Milton Greene, Grand Rapids.

Treatment of Diseases of the Ear, W. F. Strangways, Flint.

Demonstration of some new Ear Instruments, Emil Amberg, Detroit.

Digitized by Google

SEPTIC DISEASES OF THE BRAIN AND ITS MEMBRANES.

DIAGNOSIS FROM THE STANDPOINT OF THE OCULIST AND AURIST.

EUGENE SMITH, M. D.,
Detroit.

Among the clearest duties of the Oculist and Aurist to the general profession is that of affording correct appreciation of the symptoms displayed by the eye and ear, as they bear upon the recognition of disease and diathesis.

The retinitis of albuminuria and diabetes the hemorrhagic retinitis of gout, the Argyl-Robertson pupil in ataxy, the occurrence of interstitial keratitis as a revelation of inherited syphilis, and the choked disk of cerebral tumors are all examples of what I refer to.

It has been supposed that the circulation of blood in the optic papilla gives an accurate representation of the cerebral circulation, hyperaemia of the papilla being present in congestion of the brain, anemia of the papilla in cerebral anemia, etc. This is, however, not always the case.

Papillitis—inflammation of the ocular portion of the optic nerve—is one of the most important symptoms of cerebral lesions. While it is not present in every case, it exists in a large majority of cases. Exceptionally, papillitis is found in mastoiditis without endocranial complication. In extradural abscesses around the sinus it may be the only symptom.

Digitized by Google

Papillitis, *per se*, does not give any indication of the location of the abscess.

The visual power may be normal despite pronounced optic neuritis, hence, an ophthalmoscopic examination should be made in all patients who present suspicious cerebral symptoms, even though complaints of eye troubles are wanting. What is known as choked disc, too frequently not differentiated from papillitis, is a swelling, an oedema of the intra-ocular portion of the optic nerve and is usually due to brain tumors.

Papillitis, we find, more frequent in the various forms of meningitis. In suppurative meningitis there is a characteristic abundance of pus cells in the intermembranous spaces, and in the connective tissues of the optic nerve.

Hemiopia is an indication of cerebral lesion, and while it may be due to a basal lesion, it may also originate in a lesion more highly situated, even in the cerebral cortex. Temporal hemiopia is, however, a positive sign of a lesion at the base. Paralysis of one or more of the ocular muscles is a frequent symptom, and constitutes one of the most important means of determining the site of a cerebral affection. When of cerebral origin the diagnosis is rendered comparatively easy by the presence of other concomitant symptoms.

Inflammation of the middle ear, relative to intracranial inflammation is a most important subject, as it is in the middle ear and antrum that most of the pathogenic processes generate, which afterwards spread intracranially and affect the brain and its membranes.

I wish to emphasize a fact, well known to aurists, but perhaps, not so to the general physician, which is, that an *extensive purulent disease of the middle ear may exist without any discharge from the external ear and without perforation of the drum membrane*, and this point should not be overlooked while investigating cases of intracranial inflammation sequent to an apparent acute disease of the tympanum.

Chronic diseases of the middle ear, however, are the ones most prone to cause extension of the pathogenic process to the brain cavity. Optic neuritis, while of frequent occurrence

Digitized by Google

in septic diseases of the brain and membranes, usually occurs in the latter periods of the disease—in abscesses during the second stage. Cerebral abscess is an acute affection, and the neuritis does not have time to attain, as a rule, very great intensity, hence it is seldom seen to such a marked extent as in brain tumors. It is seldom of the same degree of intensity in both eyes and is not infreqently wanting in cases which run a rapid course.

Marked papillitis may be present without disturbance of vision. A suppurative otitis media with erosion of the tegmen tympani is often, if not always, accompanied with a meningitis sufficient to produce a neuritis. Again if the irritation in the tympanic cavity were sufficient to produce an effect on the carotid plexus of the sympathetic, it might easily cause irritation in the perivascular sheaths of the carotid venous plexus, as well as in those veins that pass directly from the tympanic cavity into the membranes.

Of course the absence of optic neuritis does not exclude septic disease of the brain, but when it is present and presents the special character described, together with the concomitant symtoms, it is a distinct aid to diagnosis.

More or less paralysis of the ocular muscles may supervene. Pupillary phenomena are very commonly present in abscess of the brain and are of some importance as a help to localization. Mydriasis or myosis may exist, and but one pupil be affected. In meningitis, however, both pupils are affected equally. Contraction (myosis) is the usual condition until a later stage or pressure occurs, when they both become dilated and fixed.

Thromboses of the cranial sinuses are not infrequent as a result of middle ear disease. Particularly is this the case with the lateral sinus, which is the one most frequently affected. Infective or inflammatory thromboses is often associated with meningitis, and occasionally with cerebral abscess. Eye symptoms may or may not exist. In thrombosis of the cavernous sinus, however, we always have marked ocular symptoms, illustrated perfectly by the following case which I saw in consultation with Dr. Steinbrecher.

Digitized by Google

The history of the case was as follows: Four days before Mr. O. H., aged twenty-nine, had called his physician on account of a small boil located on the neck between the sternum and thyroid cartilage which was accompanied with a general feeling of malaise. The boil was poulticed, but the center seemed to slough without marked suppuration; the tissues immediately surrounding the ulcer to a distance of one-half inch in diameter were of a purple hue and disagreeable appearance. The day I was called a small red pimple appeared on the side of the nose, but disappeared on the application of an ice compress. The night before I was called, a severe exopthalmus of the right eye took place. It had the appearance of an orbital cellulitis and was so diagnosticated by the physician in attendance. About 10:30 a. m. he called me by telephone to go and see the case, and at that hour only one eye was affected. I saw the patient about 11:30, one hour later, and found that both eyes were protruding about as far as eyes can and still be covered with the lids. So great was the protrusion and so hard the tissues, it was with difficulty I could raise the lids to make an ophthalmoscopic examination. The conjunctivae were chemosed, pupils somewhat contracted and immovable, eyeballs pushed directly forward and absolutely immovable in any direction.

The ophthalmoscope disclosed: Right eye—vitreous, somewhat hazy, hyperemia of disc, great venous engorgement, the veins being black and tortuous. Left eye—similar condition with three small hemorrhagic infarctions in retina. Temperature 102. Patient somewhat delirious, complaining of great headache. Had vomited some and had a severe chill that morning. From the condition of the eyes I diagnosticated thrombosis of the cavernous sinus from what I thought was a malignant pustule, and I prognosticated death soon. Patient grew rapidly worse, temperature going to 105 the same evening and he died that night.

There was also a puffiness of the mastoid region due to the blocking up of the emissaries mastodeum.

Digitized by Google

DISCUSSION.

DR. EUGENE SMITH, Detroit : I feel that my paper under the circumstances is really incomplete ; I prepared the paper under the supposition that it was to be read in connection with the other two papers, hence it has no bearing upon anything except the symptoms as seen by the oculist and aurist ; in other words, the symptoms of septic disease of the brain and its sinuses as seen with the ophthalmoscope.

I wish to emphasize the well known fact—it is a fact well known to the aurist, and perhaps in a way to the general physician—*that an extensive purulent disease of the middle ear may exist without any discharge from the external ear, and without perforation of the drum membrane*, and this point should not be overlooked.

I am very sorry indeed, (although I do not feel under the circumstances that I owe any apology to the Section), that the other papers are not here, that this paper might be given in connection with them; as it is, there is not as much room for discussion as there would have been with the entire paper.

The Chairman : Dr. McCool is not present, therefore Dr. Eugene Smith's paper is before you for discussion.

DR. CONNOR, Detroit : Dr. Smith has put before us a very comprehensive survey of the Eye and Ear in their relations to many of the morbid phenomena that occur in the brain. There are others that doubtless, if the paper had been read by itself, he would have dwelt upon.

One of these is the following : A young business man who had suffered for many years with severe headaches to a degree that his friends thought his mind was affected; was sent to Europe for relief. Before this there had appeared over the left eyebrow a tumor of considerable size, large enough to interfere with his hat, as thick as my small finger and as large

Digitized by Google

as half of a black walnut. His surgical friends urged its removal on account of the deformity. Surgeons consulted in Paris, Berlin and London, advised its removal, but for some reason operation was declined. The very complex defects of refraction were corrected, with the result of, first, a disappearance of the mental obliquity; second, an absence of the headache, and third, the slow vanishing of the swelling over his left eye. This occurred twelve years ago and there has been no recurrence of any of these defects.

The case proves nothing except that a swelling, regarded of sufficient importance for wise and skilful and learned surgeons to advise its removal, disappeared by correcting a refractive defect of the eyes.

If this sort of thing will occur on the outside of the body, what may not occur in the brain?

Concerning the relief secured by the removal of functional disturbance in the brain, incident to refractive conditions of the eye and disturbed muscular equilibrium, I am sure Dr. Smith has a very long list of valuable observations in common with other workers in the same field. I do not think that those unfamiliar practically with this work appreciate the power of disturbed muscular equilibrium and refractive integrity to the healthful functional activity of the brain. The following case many years ago interested me intensely. A lad some sixteen years old, was brought to me by his parents for loss of vision; the case proved to be one of typical optic neuritis. On its inception it was that and nothing more; as the case progressed, however, twitching occurred of the left arm and the left leg, and motor disturbances of various kinds, so that I was able to diagnosticate a tumor on the right side, in the motor region. The localization of brain tumors was then less understood than now. The case went on necessarily from bad to worse in spite of whatever was done, and he finally died; a professional friend made a postmortem examination and sent me the tumor, with drawings, which I still possess. The tumor was located in the motor areas of the brain. Its diagnosis was not made from the optic neuritis and loss of vision alone, but from motor disturbance to the left

Digitized by Google

side of the body. Tumors may grow without any disturbance of vision or of motion. Thus the great physiologist, Bennett, of Edinburg, suffered from illy defined ailments which his physicians were unable to locate, postmortem examination revealed a considerable sized tumor in his brain

DR. GREENE, Grand Rapids: The paper of the doctor covers a large field, and of course it will not be expected that we shall speak on more than one point, or one or two points at most. I remember a patient who came to my office about five years ago, one evening; he had recently returned from Montana; he was brought in to have an examination of his eye; he had lost practically the vision in one eye, further than that he had no trouble. I noticed his gait was a little unsteady in walking across the floor; he was not certain of his step. I brought my ophthalmoscope to bear and found very positive choked disks. I learned in the course of the conversation that he was syphilitic. He went out upon the street and his sister, who came with him, remained. I diagnosed a brain tumor, I couldn't diagnose anything else. I told his sister I thought there was no hope of his recovery. In the night he died, and was found dead in the bed in the morning. I couldn't get a post autopsy because they were prejudiced against it, so I know not what the real condition was.

THE CHAIRMAN: The Chair might say the paper is on septic diseases of the brain and its membrane, and the discussion so far has been from the standpoint of the occulist and aurist. Are there any other remarks?

DR. HAL C. WYMAN, Detroit: I was very much pleased with the paper presented by Dr. Smith, because it puts in a ready and tangible shape a good deal of information which is of very great importance in the diagnosis of these septic troubles. There is, however, one feature of these cases which I think deserves equal emphasis along with the ophthalmoscopic appearances; and this is a reference to the history of the case as regards pain and distress on connection with the other organs of the body. This optic neuritis, these conditions of the papilla which may or may not result from inflammation inside of the cranial cavity, from effusion inside of the

Digitized by Google

cranial cavity, from pressure in consequence of abscess of the cranial cavity, becomes very important in cases where we are in doubt as regards previous history; but at the same time, when there is a distinct history that will show such inflammatory trouble with the ear, with or without—and I am very glad to hear the doctor make strong that point that there may be a suppurative inflammation of the middle ear without any discharge from the external auditory meatus, I say under those conditions it is very important to have opportunity to get information through an ophthalmoscopic examination in clearing up the point. No doubt a great many of our cases of coma, which nave terminated fatally, have had their origin in conditions which could be readily relieved if we could only had the information leading up to the facts earlier.

This paper, as far as my own observation goes, in medical societies, is quite new, in that particular feature of it, setting forth briefly and tersely all of the important points, and I congratulate the doctor upon his paper, and I am sorry the gentlemen who were to take part in the other features of the subject were unable to be here.

DR. L. CONNOR, Detroit: Dr. George Frothingham, Jr., is here and I would like to have him describe a case, that he helped his father operate upon, bearing upon this very topic.

DR. GEO. FROTHINGHAM, Jr.: Mr. N., age 58, occupation, farmer, came to the office April 11, 1899. He gave a history of poor health for some years. Ten weeks ago he had the grippe and a week later his ear became affected, and was very painful. Soon afterward there was tenderness and pain in the mastoid region. A week before he came to the office it began to swell, and when he was first seen there was great swelling over the mastoid and whole side of the head up to the parietal eminence and back to the occipital protuberance. Patient suffered greatly with pain, especially at night. Had had no chills and patient said that his physician told him that his temperature had never been above normal. There was a soft spot about 2¼ inches back and 2½ inches above the meatus. The discharge from the middle ear was abundant until about a week before he came when it suddenly ceased.

Digitized by Google

He was operated upon the next day by Dr. Frothingham, Sr., Dr. Connor being present. The usual incision was made and the tissues being so much thickened, it was necessary to make a horizontal incision in order to have sufficient space to work. When this incision was made a large amount of pus was evacuated, coming from above and behind the mastoid. On raising the flap an opening was found in the skull about $\frac{3}{8}$ of an inch in diameter, through which the duramater could be seen. The duramater was not bulging but appeared granulated. A probe was passed in between it and the bone, but no large cavity was found. The bone was not denuded of the periosteum, except just at the edges of the opening. The edges of the opening were rough and they were made smooth with a currette. The mastoid cells were opened in the usual way, but no mastoid abscess was found, although the membrane lining the cells was swollen and seemed about ready to break down into pus. The wound was thoroughly cleansed with 1-200 bichloride of mercury solution and packed with iodoform gauze. The pain in the head disappeared and the patient improved rapidly from the time of the operation. This case seems of especial interest, as the cranial cavity became invaded probably through the attic forming an extradural abscess and the pus worked its own way out through the bone.

Dr. Greene, Grand Rapids: I have been much interested in Dr. Smith's very concise summary of many of the signs which are seen with the ophthalmoscope accompanying intra cranial abscess and tumors. There is one point, however, which the doctor failed to mention, which I think of some importance, and that is paralysis of the extrinsic muscles of the eye which we sometimes find in those cases.

I was called to see a case some three or four years ago where a gentleman had been suffering from severe pain in the left side of his face over his brow and over the region of the distribution of the seventh nerve. He had been suffering for about three weeks from what the doctor in attendance called neuralgia. I was called in later, because they thought perhaps there might be some affection of the ear, although there

Digitized by Google

had been no discharge from the ear. On examination I found the tympanum full of pus; the man was at that time somewhat delirious. I made an ophthalmoscopic examination and found some choking of the disc in one eye, and no disturbance whatever in the optic nerve head of the other, but there was deviation of the left eye outward. I diagnosticated an abscess of the brain. The patient was taken to the hospital, the skull was opened and a large abscess found which contained about two ounces of pus; the abscess was located in the temporal-sphenoidal lobe. This severe pain which had lasted for three weeks was evidently due to the disease of the middle ear, to the suppurative ottitis. There was also pus in the mastoid cell, not a very great quantity. During all this time the drum membrane was not ruptured; perhaps for three weeks at least the pus had existed there. I think it happens quite frequently that pus forms in the tympanum, passes out through the eustachian tube into the throat, and no discharge through the external auditory canal takes place. I think Dr. Smith emphasizes that point, and it is well to look after that condition so as not to overlook the suppurative otitis which may exist without external discharge.

THE CHAIRMAN: The Chair will call upon Dr. Eugene Smith to close the discussion.

DR. EUGENE SMITH, Detroit: I have but very little to say in closing the discussion. As I stated in reading the paper, I was confined entirely to a few of the symptoms, as my paper was really but a portion of a series of papers, and unfortunately the others are not here. The subject of the paper being, "Septic Diseases," there was no occasion to refer to the functional portion, so kindly spoken of by Dr. Connor; I very distinctly mentioned in the paper that the symptoms I gave were only concomitant and not symptoms entirely or *per se* as diagnosing the disease entirely, but taken with concomitant symptoms, were valuable aids to diagnosis.

Dr. Greene mentions the case of external paralysis; I distinctly mentioned that fact in the paper; paralysis of the "external recti muscles." The doctor mentions a case of

Digitized by Google

divergent strabismus, but does not say whether the other parts were affected or not. The case that he mentions of mere divergent strabismus, without the other symptoms of a paralysis of the third nerve, would not necessarily indicate a central paralysis by any means, it might be peripheral.

Speaking of suppuration of the middle ear (the point that I dwelt upon most emphatically in the paper, and the point that I cannot speak strongly enough upon), we have, for instance, a valuable member of our profession in this society who is today attending the meeting who had suppuration from both ears; both ears healed; the perforation of the drum membranes healed in both cases and there was no further suppuration apparent; he went on for months—for weeks anyway—and perhaps two months or more, as I remember the case, under most able treatment, thinking, as the suppuration had ceased, it must be better, and yet there was constant trouble. The aurist in attendance suggested that an operation was necessary on the mastoid, he believed there must be trouble there, and yet there was no suppuration. Being called in in consultation I agreed with him in regard to the operation; the operation was made and pus was found in the mastoid cells and pus was found in the neck where it had gone through near the apex of the mastoid. In this case there was no external suppuration, and the perforations of the drums had both healed; there was *no puffiness* over the mastoid, and this is a point I would like to mention; do not look for puffiness over the mastoid, thinking it *must* be there, as it is more frequently absent than present. But in my paper I speak only of the symptoms in connection with concomitant symptoms as aids to diagnosis.

Digitized by Google

THE EMPLOYMENT OF GLOVES AS A RECENT FACTOR IN OPERATIVE SURGERY.

SCHUYLER COLFAX GRAVES, M. D.,
Grand Rapids.

Of the many innovations which the surgeon of today is continually meeting as he treads the highway of progress, some are invaluable; some, indifferent; some, inane.

In the first category may be placed the sterilization of instruments and dressings; in the second, the matter of complete, sterile, operative suits or simple sterilized gowns; in the third, the use of Holland "klomps," or the face-mask, or the mouth-shield.

Whatever, in the army of novelties, appeals to our common sense as worthy of consideration should be investigated until its merits or demerits become fully known and its value or uselessness thus determined.

The employment of gloves as an added factor in aseptic surgical technique has now been before the profession long enough to have demonstrated its perfections and imperfections, and I, for one, thoroughly believe that it contributes an additional round in the ladder of surgical science by which we are advanced a step nearer the perfect in our art.

That the use of gloves during the performance of operations diminishes the element of danger through the enhancing of the aseptic idea is axiomatic. No sane operator will deny it any more than he will deny that the half is less than the whole.

Some, however, believe that hands can be rendered sterile enough by mechanical or chemical proceedures, or both.

Digitized by Google

No given object is sterile enough if, by other practicable means, it can be made still more sterile.

To prove that the best methods used today in the aseptic-izing of operative hands fall far short of the desirable and the obtainable, I will quote briefly from the paper of Drs. Bull and Coley, on Hernia, published in the ANNALS OF SURGERY for November, 1898 :

" After preparation by (1) tincture of green soap, (2) alcohol 95° and (3) by bichloride of mercury, the scrapings from the nails of twenty-three operators showed sterility in ten cases and culture growth in thirteen.

Bacteriological experiments following preparation by (1) tincture of green soap (2) chloride of lime, (3) washing soda, and (4) alcohol 95° in thirteen other cases showed sterility in six and culture-growth in seven."

Comment is unnecessary. The only argument against gloves which is worthy of consideration is their relative clumsiness, and this argument in my opinion is fully met by the statement of two facts, viz :

1. This feature can be more or less overcome by practice.

2. A moderate degree of clumsiness is inimical to but very few operative proceedures.

The exquisite delicacy of touch by virtue of which a surgeon can see with his finger-tips is but slightly diminished by *rubber* gloves of suitable and practical thinness. Thus the great fear that the " finger-seeing" must suffer abolition in the new march of events essentially falls to the ground.

The writer, for many months past, has been investigating this subject and has come to definite conclusions thereon.

A convert to the suggestion the very instant I saw it in print, because of its apparent merit, I fell to using the *cotton* glove exclusively.

I then espoused the cause of the *rubber* variety and now have uses for each.

A narration of the advantages and disadvantages of both styles of glove will not be amiss.

Digitized by Google

COTTON GLOVES.

Advantages.	Disadvantages.
1. Cheapness.	1. Clumsiness.
2. Durability.	2. Permeability.
3. Ready aseptibility.	3. Soiling quality.
4. Porosity.	4. Interference with sense of touch.
5. Toughness.	5. Frictional quality.
6. Frictional quality.	

RUBBER GLOVES.

Advantages.	Disadvantages.
1. Aseptibility.	1. Expensiveness.
2. Imporosity.	2. Impermeability.
3. Thinness.	3. Impermanency.
4. Slipperiness.	4. Readiness in suffering lasitation.
	5. Slipperiness.

Advantages of cotton over rubber :

1. Cleanliness.
2. Durability.
3. Toughness.
4. Frictional quality (in some instances)

Advantages of rubber over cotton :

1. Imporosity.
2. Associated preservation of tactile sense.
3. Slipperiness (In some instances).

Several of these points may seem inconsistent. For instance, porosity is stated as an advantage in cotton gloves and permeability, which is the same thing, as a disadvantage. This is nevertheless true.

Porosity permits evaporation of the sensible perspiration and thus prevents pastiness of the digital integument. Therefore porosity is an advantage, but, in this instance, the permission for evaporation to proceed gives license for extraneous poison to enter. On this account, the disadvantage outweighs the advantage in the cases where extra precautions are indicated.

Digitized by Google

This is seen again in discussing the frictional quality of cotton. Through its instrumentality, in this particular, as an advantage, tissues can be firmly yet delicately handled, without slipping, and ligatures surely and securely handled, without slipping, and ligatures securely tightened and tied. This quality becomes a disadvantage, however, when one desires to seek objects in the depths of a wound, especially if that wound involve the peritoneal sac.

In some respects silk is preferable to cotton, the sense of touch being less interfered with; but its advantages over the latter are not great and the fact that these points of superiority are possessed likewise by rubber renders silk not espedesirable.

It has been my habit, in all extra-peritoneal operations, that is, in cases where infection is not very imminent, or where, if a resultant, it is not so serious in its consequences, either directly or indirectly, as when the peritoneum is involved, to draw sterile, cotton gloves over hands prepared as scrupulously as heretofore; but where co-operative manipulations are to be practiced in the arena whose walls are peritoneum I use carefully sterilized (boiled) rubber gloves, the hands to be prepared, in addition, as in gloveless operations.

The sense of touch is most generally required at a maximum in abdominal surgery. Here also is the fertile field for infection if great care is not exercised. Therefore, the rubber glove (1) because of its very slight interference with the sense of touch, and (2) because of its greater aseptic capabilities should be the preferable variety.

It is with extreme delight that one experiences the precision and accuracy in holding instruments and in drawing ligatures and sutures inherent in the use of cotton gloves. The slipperiness of blood-smeared fingers and tools and tissues is practically eliminated. The naked fingers are not to be compared for a moment, and one cannot realize the great advantage of this frictional factor until he has experienced its virtue. In this respect rubber is vastly inferior. In fact, the use of rubber gloves maximizes the slippery effect incident to the employment of the naked hand. Rubber, again, is

Digitized by Google

fragile, is often cut through by strong traction on pedicle-ligatures, is readily ruined by puncture or laceration, is expensive, and its life is brief. Oils and soap kill it.

From the other view-point rubber is much superior to cotton. I refer to the soiling quality. Cotton, when soiled, is incapable of restoration to its original purity during the continuance of the same operation. More than that, liquid contamination sets up currents which pass back and forth between glove and integument thus favoring infection where infection is possible.

Cotton gloves require changing in order to maintain cleanliness and this consumes time. Rubber gloves, however, can be readily freed from adherent material, offensive or inoffensive, by simple immersion in sterile water or an antiseptic solution.

There is another phase to this question of glove-use in surgery, viz. : The matter of personal, digital contamination when dealing with poisonous fosi. In the first place, the risk of auto-infection is rendered more remote and, in the second place, (a much more important consideration) the possibilities of conveying infection from one patient to another is minimized.

Who of us while standing with hands submerged in the virulently poisonous secretions attendant upon a septic peritonitis does not feel more or less concern for the patient into whose abdominal cavity those same hands are to be thrust tomorrow or the next day or the next.

Of course, protection from the possible calamities inferred above cannot be secured through the use of *cotton* gloves and it is right here that *rubber* rises so pre-eminently above its sister material.

When infection is practically synonymous with death or when decidedly poisonous areas are to be entered, *rubber* should invariably be our choice ; but when infection may mean simply prolongation of convalesence, or other minor ill, *cotton*, to my mind, offers qualities superior to rubber.

With the successful experiments of Lister there arose new possibilities in surgery which had never been conceived. Step

Digitized by Google

by step have these possibilities, or at least many of them, advanced into probabilities, and the probabilities in their turn, have become realities.

To the beautiful galaxy of stars in the firmament of surgical asepticism, can now be added another glowing point in this latest application of an immortal principle.

The use of sterilized gloves in operative proceedures has come to stay. It ranks as of equal merit with the use of sterilized instruments and dressings, and advances us a step nearer the realization of a surgeon's ideal.

Digitized by Google

DISCUSSION.

Dr. Robbins, Detroit: I have but little to offer in addition to what has been said as to rubber gloves. I feel as the author does, that the rubber gloves are a very great advance over the naked hand as far as the safety of the patient is concerned. The only and principal disadvantage that we have in using rubber gloves is that it takes some little time to get accustomed to their use, and while we are using rubber gloves we will probably find that in introducing sutures and in dissecting we will use the dissecting forceps very much more often than we have done in the past, which also has the additional advantage of bringing fewer instruments and fewer foreign bodies in contact with the surfaces upon which we are operating.

The doctor spoke of the rubber gloves being easily disinfected. It would seem to me from my experience that the rubber gloves are often injured very materially and their life destroyed by boiling. The doctor suggests that boiling is a safe procedure. I believe simply washing the gloves carefully with warm water and scrubbing them with a brush and immersing them in a bichloride solution is all that is necessary to make a complete sterile hand.

Another point of great advantage in the use of rubber gloves has not been mentioned, and that is in operating on septic cases the removal of danger from the operator himself. While we are thinking of our patients we should not forget to think sometimes of ourselves. And just one other point in line with this, a suggestion that I have seen recently put in practice and which is a very valuable one, it seems to me. When we are not operating, but are making an examination in organs like the rectum, for instance, that is unpleasant at best, but should be made very much more often than many

Digitized by Google

physicians seem to think necessary. It is wise to protect the finger in the first place with flexible collodion, that is, to dip the finger into collodion three or four times until the finger-nail and the folds in the skin are thoroughly covered with this flexible collodion, then you can make an examination of an offensive rectum or an offensive abscess cavity, and after the examination is made the collodion can be pulled off the finger just like an old rotten glove and thrown out. If you find as much pleasure in taking it up as I did, it is worth mentioning.

DR. GRAVES, Grand Rapids: I want to read a little something for the benefit of Dr. Robbins. He said one point was not mentioned in the paper, viz: the taking care of ourselves. In my paper I say: "The question of personal, digital contamination, etc." I think that covers the ground he mentioned.

The matter of boiling the gloves, as he says, is something of a question. The gloves are very liable to be filled with air and to bob up thus preventing complete submergence, and it is a question whether they are rendered thoroughly sterile or not.

As to their being destroyed by heat, I have not found it so; I have boiled sets of gloves a half a dozen times without any injury to their quality and finally discarded them because I had used them in a septic case.

I did not mention how the gloves should be removed. They must be reversed; they cannot be pulled off; but by reversing them they come off very readily.

Digitized by Google

TRAUMATISMS OF THE MALE URETHRA.

CHARLES W. HITCHCOCK, M. D.,
Detroit.

To even comment upon the wisdom and nicety with which are protected the canals and organs, upon the integrity of which life itself depends, is almost trite, and nothing more justly elicits such admiration than the anatomical structure and situation of the urinary organs and tract, from the kidney to and including the urethra.

Another trite saying, " It never rains but it pours" so frequently illustrated in the physician's experience in the successive occurrence of similar cases, was exemplified in my practice in the recent occurrence of two cases of traumatic rupture of the male urethra, within two weeks of each other, whereas I shall probably not see another case for years to come, since, happily, this canal is seldom the site of violent traumatisms and their seriousness may well be said to be in direct proportion to their rarity.

Though I run the risk here of "carrying coals to Newcastle," still it may not be wholly unprofitable to briefly call to mind the anatomy of the urethra, which tubular canal is commonly from eight to nine inches in length and is divided anatomically into (a) the prostatic portion, the widest and most dilatable part of the canal, passing through the prostate gland and about one and one half inches in length ; (b) the membranous portion, extending from the apex of the prostate to the bulb of the corpus spongiosm and perforating the dense deep perineal fascia, or triangular ligament, the narrowest part of the canal and very short, only measuring about $\frac{3}{4}$ inches along the upper wall and about $\frac{1}{2}$ inch along

Digitized by Google

its lower surface; (c) the spongy or penile portion, about six inches in length and further divided into the bulbous and pendulous portions.

The closeness of the lateral attachment of the deep layer of the superficial fascia and its mersion posteriorly with the deep perineal fascia is to be noted, since this commonly forces the escape of urine extravasated in the perineum forward into the loose tissue of scrotum and penis.

Clothed in three coats, a mucous, a muscular, and an erectile, this important passage is so well situated relatively to other portions of the anatomy, protected by the symphysis pubis above and the thighs and rami ischii laterally, and so movable withal, that it ordinarily performs its functions undisturbed by trauma save such as youthful indiscretion or the superfluous zeal of its possessor may invite, but now and then its precincts are invaded, and incised, lacerated and contused, or punctured wounds may result, but if the urethra escape without complete rupture at some point of either anterior or posterior wall, the injury may be of trifling importance.

In a study of over two hundred cases of urethral rupture (Kaufmann, quoted by White & Martin), falling astride was assigned as the cause in 80 per cent., perineal blows in 12 per cent., being run over by vehicles in 4 per cent., and being unseated on the pommel of a saddle in 4 per cent.

Much, of course, depends upon the line of force, whether it be lateral or vertical. If the former, the injury will be from compression against one of the rami of the ischium; if the latter, from compression against the symphysis pubis. Here the lower wall of the urethra usually ruptures first and may alone be torn, though there is, of course, contusion of the surrounding structures, the bulb, the perineal structures, and often of the attachment of the cavernous bodies. The membranous and bulbous portions are the parts which suffer most frequently. My two cases are as follows:

CASE 1.—Jan. 4th, 1899, I was called to see Charles G., who had been injured the day before. I found an active, wiry, muscular man of 41, who, while employed in rolling a heavy iron coping in which car wheels are molded, had re-

Digitized by Google

ceived a blow upon the perineum. He was working in a position astride of the coping, and as it had projecting lugs on its perimeter, it rolled jerkily from one lug to another, one of them as it came over catching him in the perineum. He experienced some but no great pain at the time, but bled quite freely from the penis that evening.

I found him at about 10:30 a. m., with a temperature of 102° F., and a pulse of 110, hard and wiry. There was considerable perineal tenderness, but no swelling or other objective evidence save the blood escaping from the penis. He had passed several ounces of urine but in small quantities and with considerable pain following. A small gum catheter was finally passed with difficulty but very little urine was obtained. There was evidently a solution of continuity of the urethral wall, the mucous coat at least, at about the bulbo-membranous junction.

At 6 p. m., hot applications having been kept on the perineum and salol and quinine having been given in appropriate doses through the day, he was quite easy, temperature 100° F., and pulse 86. There was no pain except on urination when there was much tenesmus. All urine passed was very bloody.

There was no swelling in the perineum, the tenderness seemed less and there was no other possible sign of extravasation save the temperature, which next morning was 102° F., and the pulse 88. He was comfortable through the day excepting that he had a chill that afternoon, which was reported to me the next day, the third day after the injury, when his temperature was 101.5° F., and pulse 116, perineal tenderness much less and less pain on urination. He was evacuating about a normal quantity of urine which was still quite bloody and was now slightly ammoniacal in odor. He seemed comfortable, cheerful, and had no chill.

The fourth day after injury, he was seen somewhat hurriedly and was found feeling particularly good. I have no record of pulse or temperature, but I recall that he was sure that "he had no fever and was all right." He was doing so well and feeling so fine that he was not seen on Sunday, the

Digitized by Google

fifth day after injury, but telephoned me along in the evening that his penis and scrotum were slightly swollen, the first positive sign of extravasation.

Early on the morning of the sixth day after injury, he was found somewhat anxious, scrotum and penis quite oedematous, temperature 103.4° F., and pulse 120. He was told that operation was inevitable, but he refused it until consultation could be had. Dr. Robbins saw him with me at 6 p. m., when pulse and temperature were 112 and 102.6° F. respectively, the urethra passable to catheter, but with difficulty. The doctor concurred in the advice already given and kindly assisted me in the operation, which was done at St. Mary's Hospital that evening.

On cutting through the deep superficial fascia and into the fibres of the accelerator urinæ, a small clot about the size of a large pea marked the especial point of hemorrhage at about the bulbo-membranous junction. Extending both above and below this point was a ragged wound of the lower urethral wall. The urethra was not now passable either from above or through the perineal wound to catheter or sound and so incision was made to allow of free opening into the bladder, a catheter was passed through the penis and left in situ for first four days. He made an uninterrupted recovery and at the end of four weeks left the hospital, having still a small fistulous opening through which some urine escaped, but this soon closed entirely and the man is now as well as ever, coming to my office twice a week to have a sound passed. He once failed to come for eight days and the contraction was such that, whereas I ordinarily pass with ease a French No. 24, I could only then pass with difficulty a No. 10, gradually dilating up to No. 24, and causing him considerable hemorrhage.

CASE 2.—January 18th, just two weeks after my first visit to case 1, I was called to see H. B., a laborer, 42, a healthy German who, the day previous, had missed his footing on some iron work, one foot slipping through in such a way as to throw his perineum in violent contact with an upright piece. He finished the day's work, but noticed that the first

Digitized by Google

urine passed was bloody, and during the night he had some trouble in passing urine and experienced a little pain.

I saw him about 11 a. m., pulse 76, temperature 99.5° F. On passing a sterile soft rubber catheter, it encountered a roughness at about the membranous portion, slipped by it, and passed in readily up to the end, but withdrew no urine. Moreover it slipped in with such ease as to make it evident that it had passed out of the urethra. I told him at once of the seriousness of his condition, advised his going to a hospital for immediate operation, and he very sensibly consented. I operated at 4 p. m. the same day at Grace Hospital.

When prepared for operation, the perineum and sides of both thighs presented areas of ecchymosis. The usual incision for external perineal urethrotomy, in "the line of safety," was made and just underneath the deep layer of the superficial fascia I cut through the middle of a clot about the size of a small walnut, which, when evacuated, exposed the site of the urethral wound, the extent of which (about an inch in length) was only revealed by forcibly parting the tissues. A sound was easily passed and sutures of chromicized catgut were so placed as to completely close the urethral wound, including all its coats. The sound was then withdrawn, a catheter passed, the sutures tied, and the external wound closed except at its lower part with sutures of silkworm-gut.

The catheter was left in situ for four days, then withdrawn, and all urine passed readily through the natural channel. Had it not been for an infection which I attributed to the chronomicized cat-gut, and which gave no trouble after the pus was promptly evacuated on the sixth day, I should have had an entire closure of both wounds (perineal and urethral) by first intention and an earlier complete recovery. Some urine escaped through the perineum after evacuation of the abscess, but at the end of three weeks it was all discharged by the penis and the perineal wound was almost entirely closed to the surface. Recovery was uninterrupted and he now comes to the office once a week to have a sound passed. The only evidence of much tendency to contraction here was evident after a two weeks' absence, when the No. 24, usually

Digitized by Google

passed with ease, was passed only with some difficulty and occasioned some hemorrhage.

These are cases likely to occur in the practice of any one of us and they present some practical points as to treatment. The escape of blood indicates, of course, a laceration of the mucous membrane, but other evidence must be sought to learn the extent and depth of the lesion. In case 1, the obstructed urethra made me suspicious of rupture through the entire wall and yet the fact that the canal was passable, though with a little difficulty, that there was but little perineal tenderness and no swelling, and no evidence of extravasation made me doubt the depth of wound and led me to an expectant plan of treatment rather than to insistence on immediate operation.

The one strong indication as to probability of rupture entirely through the wall was the persistently high temperature, and I question whether this should not have been my guide to earlier operation, say as early as the first or second day after injury; for I take it that, so soon as you are satisfied as to complete laceration of the urethral wall, there can be no doubt as to the course to pursue, in spite of the fact that even deep wounds of internal urethrotomies heal kindly without much disturbance. I seriously question whether an earlier operation would not have secured prompter healing, less formation of cicatrical tissue, and so less tendency to subsequent contraction.

Doubtless, both these patients will need for the rest of their lives the occasional passage of a sound to ensure their bodily comfort and peace of mind. Pressure, hot applications, urinary antiseptics, etc., are recommended even by the best authorities as the proper line of treatment in cases uncomplicated by retention, but it seems to me that, if in any case of injury to the urethra, we can establish a diagnosis of laceration through the three coats of the canal, it may be fairly laid down that the expectant plan is not a wise one to follow, and that immediate operation is far better both for the present and ultimate good of the patient.

Digitized by Google

The necessity for careful asepsis, the least manipulation of such injuries consistent with reasonable diagnostic information, sterile sounds, catheters, etc.. has not been emphasized above, as these are matters the importance of which goes without saying.

Digitized by Google

DISCUSSION.

DR. GRAVES, Grand Rapids: I wish to take a little friendly exception to Dr. Hitchcock's conclusions. He seems to desire to indicate to us that as hind-sight is better than foresight he would now have acted differently in the treatment of the first case, had he to do it over again; that he would proceed to immediate operation. It seems to me that that conclusion is hardly justifiable. Where blood follows a urethral traumatism there has certainly been a solution of continuity, that means an open portal; that means possible infection, possible infiltration; and it seems to me, in view of the outcome of the case, that the best treatment for the man would have been that which I believe would have permitted avoidance of an operation entirely, viz: the passing of a catheter, which the doctor says was possible, into the bladder and fixing it there, tying it in; by that means, and through that instrument as a channel, his bladder could have been irrigated with some solution and vesical drainage instituted and maintained.

It has been my privilege to see considerable work at the hands of that great surgeon, Dr. McBurney, of New York, and I have seen considerable of that sort of work at his hands. I am confident he would have treated the case in that way, and it seems to me by so doing the man could have been saved the operation; but possibly not.

As these meetings are for open and frank discussion, I deemed it proper to mention that fact. I think this is the way I would have treated that case.

DR. ROBBINS, Detroit: I was very much interested in these cases, especially the first case of Dr. Hitchcock's; having conversed with the doctor from day to day during the treatment of this case, naturally I felt quite sure that he did

Digitized by Google

just about the proper thing. However, I think the impression that has been given by the doctor as to the ease of passing a catheter possibly has been a little too forcibly put. When I saw the case certainly it was not very easy to pass a catheter, especially one of any size. The laceration was decided, and after fever, in such a case, has existed for two or three days and there is a gradual rise in pulse, then I think there is no question of the necessity for operation. I am certain there was not in this case. I am sure if any surgeon had seen the man that day he would have decided he ought to have an operation.

The question of catheter seems to me to be a wide one. When you can introduce a full sized catheter and drain the urine through the catheter so it will not touch the urethral lacerated surface, having first irrigated with boric acid, or some other similar solution, you are more apt to bring the lacerated parts in apposition. It is not often that the urethra rebels against a catheter left in place; if it does, a sedative of some sort, either local or internal, will help you out of your difficulty.

Both of these cases are interesting ones, coming so near one another.

Hemorrhage, immediately after injury, shows rupture of the urethra. I doubt if you get much hemorrhage with rupture of the mucus membrane alone.

Dr. ———, ———: I wish to emphasize the importance of primary treatment, thorough treatment in the start, by giving a history of a case that came under Prof. Senn. I saw him operate upon a man who was injured through the urethra by a railroad accident. The man was treated and after about six weeks he came under Prof. Senn's treatment, and a particular surgical operation was necessary on account of complete stricture of the urethra; and I simply mention this case to show the importance of thoroughly attending to these cases when they first come under observation and not rely too much on the expectant plan of treatment.

Dr. Stockwell, Port Huron: The remarks that I have to make have to do with a peculiar condition which at times

Digitized by Google

we may get in injury of the urethra, and it may be a benefit in the way of diagnosis. I remember some years ago seeing a young man upon whom a log had rolled in being thrown from a car; the log had rolled up upon the thigh and produced a fracture of the femur above the middle third. Some hours after this the young man had difficulty in passing his urine. A catheter, used by his surgeon, was passed with great difficulty and was attended with great considerable hemorrhage. It was a mystery why this condition existed, as the injury was supposed to be entirely in the upper part of the femur. There evidently was a rupture of the urethra also. The man died. I made an autopsy and found that the upper portion of the femur had been thrown over against the ischium producing an oblique fracture of its ascending ramus, giving a cutting edge to the lower part of the fragment; this lower fragment with its sharp edge had been driven inward far enough to cut through the membraneous portion of the urethra and had then sprung back nearly to its original position. The young man's efforts to void his urine and the attempt to pass a catheter caused the urine to be extravasate into the tissues. He subseqnently died of uraemia. I refer to this to show how the urethra may be injured in an an unusual way.

Dr. Robbins, Detroit: As regards the after treatment: The doctor suggested he was passing a No. 24 sound. Now I want to suggest that I believe it possible to entirely cure that patient if instead of being satisfied to pass No. 24 sounds he would pass a dilator with continual pressure, increased for twenty minutes at a time; I think it is very possible to get an absorption of fibrous tissue that has been formed around the seat of injury.

The Chairman: I think the point brought out by Dr. Stockwell is a good one, and one we ought to remember, if we have any hemorrhage from the urethra from other causes besides direct causes. We may have fracture of the rim of the pelvis or even some of the extremities, as it were, of the pelvic bones that may cause this fracture.

Digitized by Google

I thing the point brought out by Dr. Graves is a good one and I would like to differ, too, with Dr. Hitchcock. Pressure, of course, stops hemorrhage, and if passing the catheter as Dr. Graves says, and which Dr. Hitchcock said could be done, would stop the hemorrhage, that is all you want to do. I would go one step further, which of course is laid down in our surgeries, to make pressure upon the outside with a roller bandage; I think then you would have your hemorrhage at least controlled. I would like to differ with the idea that a very large catheter can be kept in for a number of days, and that the bladder could be kept for a week or ten days, or twelve days, or might be kept in an aseptic condition. When irritation does take place you can easily remove the irritation and so get rid of your trouble.

Dr. Hitchcock, Detroit: With regard to the suggestion of Dr. Graves, I hold similar sentiments to his, and the plan of treatment that he suggested was not lost sight of in this case; indeed it was the first thing that was suggested to the patient. But there was a man intensely nervous and anxious, at his home, uot in a hospital, where you could have better control of him, a man who, as soon as I got the catheter into his bladder begged me to take it out; I no not think if Dr. Graves had that case he would have done otherwise than I did. I summed up the situution and decided to do as I did. I hardly think I could have done otherwise.

Dr. Robbins has well said the bladder very often kindly tolerates a foreign body, a sterile catheter being kept in the bladder without any great irritation for the time. Neither of these patients suffered any irritation from those catheters left in the bladder for the first four days, and there would have been no suspicion on the part of Dr. Graves or anybody else of exact apposition and immediate union, had they been present at the operation and seen the wound, in this urethra, which in the first case presented a ragged wound of about an inch or inch and a quarter in length, so ragged that the keeping in apposition of its torn edges was impossible. There was no other way possible from the nature of things than that the urine should flow out of the wound. There was no

Digitized by Google

irritation, and I believed it to be of advantage to keep the urine from that wound as long as I consistently could. I might have left the catheter in longer, but I preferred to be on the safe side.

While my second case was in a ward at Grace Hospital, another case came in to that ward which shows the history of these cases when neglected. The case came into the ward under another physician, who showed me the case one day. In this case the man had suffered a rupture of the urethra some ten years before and he had been treated on the expectant plan, and the result was that he was an invalid for a long time; there was a great big perineal abscess there; the urethra apparently gone, and that man's condition was indeed a most wretched one.

One of the most helpful suggestions that has been made, and it seems very important in such a case, is the suggestion of Dr. Robbins, that a dilator be passed and that the case be treated as other strictures are sometimes treated, (strictures other than traumatic), the aim being to secure absorption of the fibrous tissue and so obviate any necessity for further passing the sound.

Digitized by Google

URETHRAL DISEASE AND MARRIAGE.

FREDERICK W. ROBBINS, A. M., M. D.,
Detroit.

One who has followed the literature of pelvic surgery for the last few years, has no doubt come to believe that the great majority of cases of salpingitis and allied diseases are of gonorrhœal origin. One need not have practiced medicine for a long time before having under his care patients who give a history of perfect health before marriage, but that event has ushered in discomfort, distress even, to the extent of practically rendering one unable to cope with the duties of life. Life has lost its charm; there is no home; sexual life is repulsive or impossible; children do not come to brighten the family life; love itself is fast ebbing away, and both husband and wife are beginning to wish that the marriage contract had never been entered into. The wife in her innocence does not think to question the husband's virtue, and the husband is very likely one of the many who, at marriage and even long before, has been true to the woman of his choice.

Within the month I have seen such a case. The lady has since been rightly operated on and although in all probability she will hereafter enjoy comfortable health, that home will ever be childless. I well know that there are many other cases to which nearly these same words can be applied, namely, the cases of early abortion which so many women think a sinless and comparatively harmless matter, but of these I am not speaking at this time.

The question immediately comes up, who is responsible for injury suffered by this large class of innocent women? It certainly is true that no man would willingly infect his wife

Digitized by Google

with gonorrhœa, even if he had no adequate conception of the far-reaching results of such infection. Many young men look upon gonorrhœa as a simple disease, which, as they grow older and thus more ripe with experience, and especially if the question of marriage presents itself to them, becomes a more serious matter. Many a man having had gonorrhœa no doubt marries without having consulted a physician as to the propriety of that step, and very likely has never been treated by one for his difficulty.

Then if this be so, we must admit that the medical profession is not entirely to blame for the disease with which the young wife is infected, yet I can but feel that as a profession we should feel the shame of the present state of things and should consider ourselves directly and indirectly responsible for much of the disease of pelvic organs in *recently* married women, as well as those not recently married. Indirectly responsible I say, because is it not a fact that many of us are not doing our duty in educating the patients who come to us for treatment. Are we not too often satisfied in bringing the case to what *seems* to be a cure, without advising the patient of the dangers which may be before him? Are we not sometimes willing that the many relapses which follow should be credited to renewed infection, rather than to our responsibility for having discharged a case uncured? To be sure in this way we have kept up our reputation of being able to cure urethritis, but we cannot blind our consciences to the fact that many such cases are not well, and from these cases springs more suffering.

Directly we are responsible when we discharge patients from treatment or make so light of their condition that they discharge themselves, before we know or are reasonably certain that germs of infection have disappeared.

In the Journal of the American Medical Association for April 22nd, there is a short article by Dr. Greenberg of Milwaukee, on "Recurring Gonorrhœa." He reported a case where he began treatment of gonorrhœa July 2nd, 1898, and discharged patient cured in a month. Patient was instructed to abstain from use of alcohol and not to marry for one year

Digitized by Google

after discharge had disappeared. Patient had no further trouble and married March, 1899, and a week later had purulent discharge containing gonococci, as also did his wife, whom the doctor had treated previous to marriage and knew to be uninfected.

Such is the history of many a case and I wish to find fault with the manner of conducting this case as it is an example, I believe, of the way very many cases are handled. The doctor does not say how he satisfied himself that the patient was well, therefore we can say little upon that point; but he does distinctly say that the patient must abstain from alcohol in every form; and thereby admits his fear that the patient is not free from disease.

The point that I am urging with all the force that I know how, is, that we should know that a patient is cured before discharging him. When no gonococci have been discovered for say two weeks, repeated examinations having been made, when no pus threads or commas have been detected in the first morning's urine; when the centrifuged urine shows no sediment containing gonococci, we have a right to say, that, in our opinion, the patient is well; but then should we say to the patient, "Now abstain from alcohol ?" By no means, except on the general ground of belief in abstinence; but rather the plan should be adopted of producing urethral congestion and thus stimulate to action any lurking microbes that may be hiding under some epithelial cell. It is better to know that they are there than to pat ourselves on the back at the rapid recovery of the case, until, as in the instance reported, husband and wife are suffering distress of both body and mind.

The second point that I would criticize in this paper is the advice to refrain from marriage for a year. If the patient has not the germs of disease within himself why refrain from marriage for any long period of time ? If this patient has been allowed beer and champagne in excess, or if an instillation of nitrate of silver solution had been given at the time the patient was discharged cured, the latent germs would have developed just as they did after excessive intercourse. If a

Digitized by Google

simple inflammation had been produced, no gonococci would have been found in the discharge which would have subsided in a few days.

In conclusion, 1st, cessation of a gonorrhœal discharge is no sign that the disease is well. A chronic anterior or posterior urethritis may exist for months after such discharge has ceased.

In Dr. Ferd C. Valentine's office recently I saw a patient who gave a clear history of having had gonorrhœa for the last time, thirteen years ago. He was astonished when gonococci were demonstrated to him.

2nd. The two glass test must be made, if possible, to discover any form of discharge. The centrifuge should be resorted to in all doubtful cases.

3rd. Indulgence in alcoholics, especially beer and champagne, should rather be advised than not.

4th. The urethra should be irritated by chemical means.

5th. If, after all these precautions are taken, no gonococci have been discovered by a painstaking and competent microscopist, the patient may be allowed to marry at his own discretion.

Gentlemen, in presenting this short paper have I encroached on time that should have been given to other subjects? Have I been mistaken in thinking that the profession is derelict in these matters? Then I beg your pardon. If, on the other hand, it be admitted that frequently patients being treated for gonorrhœa are discharged as cured, on grounds scientifically inadequate, then accept this, my appeal, and for the sake of the innocent wife, join in demanding of the medical profession not only scientific treatment but a scientific judgment as to probabilities of infection.

Digitized by Google

DISCUSSION.

DR. GEORGE HOWELL, Tecumseh: I have listened with very much interest to Dr. Robbins' paper on urethral diseases and marriage. There is a bill now pending in the legislature which provides that "Any person who has been afflicted with syphilis or gonorrhœa, and has not been cured, who shall marry, shall be deemed guilty of felony, and, on conviction thereof, shall be punished by a fine of not less than five hundred dollars or more than one thousand dollars, or by imprisonment in the state prison at Jackson not more than five years or by both such fine and imprisonment in the discretion of the court." Now I would like to know the views of the members of this section on this important bill, whether or not a law should be enacted prohibiting the marriage of those who have syphilis, gonorrhœa or tuberculosis, and who have not been cured.

THE CHAIRMAN: If there are no objections any one who feels disposed to will be asked to answer the doctor's questions.

DR. HAL C. WYMAN, Detroit: I do not know but I should rather keep quiet on this subject. I thought we gathered here for the purpose of doing what we could to keep the tombstones out of the cemetery, and I am a little bit surprised to find champagne and lager beer recommended in the treatment of gonorrhœa, but under the circumstances I do not doubt but what it was all right, but would put it perhaps in a little different way.

Speaking of the antiquity of this disease, I once saw an old man eighty years of age who had what he called the gleet; he said that old Dr. White of Buffalo had treated him for it for twenty years before that. He was a man of truthful rep-

Digitized by Google

utation, and I have no reason to think that he did not tell the truth.

The question in this situation is an exceedingly important one. When is a case of gonorrhœa well ?

Dr. Robbins has tried to tell us, and he has tried to put us in possession of information that will be trustworthy and reliable. It is customary with most of us to pronounce gonorrhœa well when the patient's clothing passes unstained, when there is no purulent discharge; but surely, careful, scientific, discriminating examination has shown the existence of the gonococci of the infecting material, in many cases long after that.

The application of our knowledge to the principle which Dr. Howell has introduced here as regards legislation upon this very important point, is a serious matter, exceedingly so. If the state should take upon itself the right to make a law of that kind, who is going to say when a man is well ; and we may today, perhaps, seriously say whether the evidence now in the possession of experts, after listening to the doctor's paper, is sufficient to say positively whether a man is well or not from gonorrhœa. The mere fact that we do not find the gonococci at one or two examinations, would not be positve evidence that they were not secreted in the deeper portions of the recesses of the urethra, or in some part where they would be dislodged at some unusual occasion like the marital relation.

Of course we have got to keep at work upon that subject. The items mentioned by the doctor about the relation that this disease bears to serious diseases in women is one that deserves most discriminating attention, and we have got to keep steadily at work improving our methods of diagnosis until such time as we are able to make more positive conclusions and more fixed convictions as to what the real situation may be in a given case. Heretofore we have been concerned mainly in relieving the distress of the patient ; all the patient wanted was to be relieved of his pain and of his nasty discharge; when that had disappeared he had no further use for the doctor ; but now the doctor's relation to the situa-

Digitized by Google

tion comes in in a different aspect altogether; that is, the relation of a particular case of gonorrhœa to the community or to other individuals, other persons who may be interested in the matter. I say, gentlemen, it is a serious matter and one that deserves most careful study and consideration.

DR. MCLEAN, Detroit: This is a subject in which I am somewhat interested, and I think the point that Dr. Robbins mentioned, when a man who once had gonorrhœa should marry, is a grave question. We have all had patients who had a case of gonorrhœa and who apparently are well; in two or three months, maybe after they have been drinking a little or having a little sexual intercourse the discharge returns. We all know the gonococci are perfectly at home in the living tissue; they are one division of the micrococci that visits the living tissue. The coccus of gonorrhœa imbed itself in the tissues or in some of the ducts and under excessive stimulation, from sexual intercourse or the taking of liquor, it is started up. The gonococcus is different from other cocci in that it will set up an irritation on an intact membrane. It seems to have the effect of attacking normal menbrane; many of the other cocci do not have this effect. After marriage, although the gonococci do not present any great symptoms in the possessor, that is, the mucous membrane appears to be immunized from their effect, but when it comes in contact with the mucous membrane of another individual it sets up a violent and typical case of gonorhœal inflammation. The question is, When is a person well?

I believe some of the doctors in France, in dealing with men who wish to get married and who are troubled with things of this kind fill the patient up with liquor; then give him a big heavy supper, put champagne into him and send him to a dance for two or three hours, and again to some place of questionable virtue and have the patient examined in a couple of days, I believe, and this is tried for four weeks in succession, and at the end of the fifth week, if the fellow seems to stand it, the doctor gives him a certificate. Some of us have not the conscience to recommend that here, but we know that people who go to Paris take kindly to that treat-

Digitized by Google

ment. This is a Parisian treatment, of course. I think, however, it is a good point in Dr. Robbins' paper. Let these people have stimulants, give them liquor or wine or champagne, or anything that will stimulate, then make the examination after that, and if this can be thoroughly tried, without any effect or any extra amount of secretion, or any secretion in which can be found gonococci, I think that is the safest and best way we have at present.

DR. ————, of————: One little point in reference to these recurring cases of gonorrhœa, where there are latent germs in the tract, that has not been touched upon, that Prof. Bellfield, of Chicago drew my attention to, that has been a great deal of help to me in the management of some of these cases, and perhaps it might be to others if they tried it. We all know the anatomy of the prostate gland, how easy it is for the gonococci to drop through the little tucks, into the little pockets, and remain there latent, and the means of getting rid of these is the milking of the prostate gland. I remember one case that had recurred at different times for a couple of years. Soon after getting this suggestion I took pains to see this patient, although he had had no trouble for several months, no discharge whatever, and I milked the prostate gland and got out about a tablespoonful of pus. I think keeping the prostate emptied out will be one help in bringing some of these long-winded cases to a favorable termination.

DR. WESSINGER, Ann Arbor: I have been very much interested in Dr. Robbins' paper, because it is on the subject of a very common disease; a disease we are called upon frequently to treat, and of course after handling this disease for some years we naturally form some opinions. Now I believe that there are cases of gonorrhœa which are never cured. When you get a diseased process of that kind involving those structures in the deep urethra and beyond it in the ejaculatory ducts and even higher, it is a difficult matter to rid those passages of that pathological condition. I remember in particular a case: I have under observation now a patient who contracted gonorrhœa ten years ago; that man comes to me four or five times a year, and I have good reasons to believe,

Digitized by Google

as far as indulging goes now, that he is continent; he contracted gonorrhœa ten years ago, and he is not free of discharge, and he is not free of gonococci, and I question whether he ever will be. I have milked the prostate, and I have tried all these methods and yet there is now and then, three or four times a year, this recurrence, under the microscope, of gonococci, and of the conditions we get from that trouble. That man, four or five years ago, became engaged to a girl, he afterwards came to me and asked me about it, in regard to the question of marriage ; I said no, and I have said no to that man four or five or more times, and he has finally broken off the engagement. I did not believe that man ought ever to get married, and I believe—this may be a strong statement—I believe that a man who is the subject of such a condition and seeks the advice of a physician and the physician says no, in regard to the subject of matrimony, and that man gets married and infects a woman, that he is culpable. In answer to Dr. Howell's question, I believe it is a piece of criminality to do that. The ordinary cases of gonorrhœa of course recover in due time, but I believe, as Dr. Robbins has laid down, that until the urine is free of gonococci, and free for some time, that no patient should be pronounced cured, at least no patient should be pronounced cured until the results of the microscopic examination warrant such an expression.

Dr. Connor, Detroit: The subject introduced before us concerns all physicians. It is said on excellent authority that from thirty to fifty per cent. of all the blind from any cause are due to gonorrhœa; I have gone through a blind asylum and as near as could be determined the majority of the inmates were there because of gonorrhœal infection. This is another reason why the view presented by the author of the paper should receive serious consideration. Again, distinguished medical men are noted as having built magnificent houses and established large bank accounts from the fees for removing the ovaries of women infected with gonorrhœa. The amount of loss to the medical profession by the prevention of these cases would be enormous, especially to the oculist, and yet

Digitized by Google

I am as sure, as I am of anything, that no oculist, here or elsewhere, ever wants to see another case of gonorrhœal infection the rest of his days; so uncertain is the result that it makes a picture which haunts him evermore.

If the method advocated will render all infected perfectly wholesome and clean, certainly every member of the medical profession will be glad to adopt it. It is implied that operation would act as a deterrent to promiscuous sexual intercourse, and if so all lovers of humanity should be its enthusiastic advocates.

Dr. Wilbur, of the Bureau of Statistics for the State of Michigan, tells me that more of the native population die than are born every year in Michigan. It is clear enough why this is so if operators can build from fees for the removal of the ovaries, magnificent houses, instead of the ovaries building children for the peopling of the state. Those who believe that the present race is worth perpetuating in such a shape as to bring an honored manhood, will heartily commend Dr. Robbins' paper. It has been a belief in my head, and a desire of my heart, that each should lose no opportunity to teach the younger persons with whom he comes in contact as a family physician, the way that leads to physical health, rather than the one that leads to physical disease and physical ruin.

Dr. Strangway, Flint: I shall not discuss the paper directly, as for some years I have limited my practice to the eye, ear, nose and throat. I wish to discuss the phase brought up by our friend on the right, as I am not satisfied with having it dropped without something more being said upon "the question of legislation." We legislate so a man at times cannot enter our country without an examination; we go on board our vessels to see that they are free of disease; we legislate so that a child cannot go to school if it comes from a house of scarlet fever, or diphtheria, or smallpox. In fact we have many laws on our books which regulate and control the actions of our citizens in relation to diseases. Now, is it possible, is it constitutional for us, to insist upon a man's submitting himself to a physical examination before he is

Digitized by Google

married, before he gets his license? I have two daughters of my own whom I am rearing to womanhood, and I hope the day is coming when two noble young men will ask for their hands in marriage, for there is no nobler position than that of motherhood, yet from my observation I dread the infection for them as well as for every girl that becomes a wife; I cannot help it, I have seen too many of the resulting evils. This week I have had three innocent women in my office, suffering from syphilis, who were married within the last year. They were entirely innocent, with perfect faith in their husbands. This, I think, is one of the most grave questions we, as a society, can consider. We are here, not only to do ourselves good, but to prevent sickness among the people of this country. Is there any way we can urge legislation that will help to avert the serious results that do occur after marriage? If we pass a law, and it is proven unconstitutional, we have done a great amount of good, as it would be a great educator. As several previous speakers have said, young men think too lightly of gonorrhœa. If there is a law put on the statute books that a man should not be allowed to marry until examined, it would make the people ask questions, and if for no other purpose than education, I would advise the passage of such a bill. I have not given the proposed law very much consideration, hence I am not prepared to discuss it. But it seems to me that every county should have one physician appointed, who would be more or less of an expert, and when a young man wanted to get married he should go to that physician and be required to make an affidavit that he never had gonorrhœa or syphilis, or if he has had gonorrhœa or syphilis, that physician should make a careful examination and be able to sign a certificate that he was free of disease before license was issued; this matter need not be public, the young man goes there quietly, but it should be necessary to have a certificate from that physician before he approaches the county clerk. It would accomplish a great deal; it will shut out these cases that have strictures and a little gleet, and these cases of recently cured gonorrhœa. The husband of one of the cases that I spoke of that came to my office within

Digitized by Google

a week, had gonorrhœa six weeks before he was married. Is it any wonder that women are infected? He said the doctor claimed he was cured.

I do not wish to take up much time, but I do believe that I would not do right unless I expressed these ideas here, and I think it would be well for the association to consider whether by passing a vote, or by taking any other steps, we can assist in passing a law which may prevent, by the direct influence of the law, or by the indirect educating influence of the law, some of these painful results.

Dr. Hitchcock, Detroit: I have no objection to Dr. Robbins' paper; I have no criticism for it, save in one point: I think perhaps we may in all friendliness deplore somewhat his Parisian tendencies. It seems to me that alcoholic tests might be eliminated from the treatment advised and the patient gotten into that stage where repeated examinations would show the urethra and the urine to be free from gonococci so that he can stand the ordinary strains of a temperate life, without advising that he fill up on beer or champagne; to say the least must be questionable.

In regard to the legislative proposition: It seems to me that this point could be considered, as to whether such a law would not in a way defeat its own object, that is, as to its provision in regard to syphilis. If any of the profession are aware of any method of examination that can disclose that a man who has once been a syphlitic is entirely free from that disease, then I do not know such a method; I may be behind the times, but I do not think the profession of today know of any infallible method of examination by which it can be safely said that a man who has had syphilis may not or will not procreate an inferior race that shall be a discredit to the state. I do not know how any one can by examination disclose that a man who has once been a syphilitic will not himself sooner or later become subject to syphilitic diseases of the nervous system, diseases which shall make him fitted to procreate a syphilitic and sickly race. For that reason all such legislation, to make it effective as far as syphilis is concerned, must forbid the marriage of syphilitics.

Digitized by Google

DR. HAUGHEY, Battle Creek: Gentlemen, I will not occupy the floor very long. Like the rest, I am glad to have heard this paper; I am glad to have heard Dr. Robbins read this vigorous paper upon this subject, and I am glad to have heard the remarks that have been brought out by the gentlemen present, particularly am I pleased with the remarks of the doctor on my left. I endorse them fully; I believe, as he has stated, we must protect our population, not only those whom we have but those who are to come in the future, in some way, and the question is, what is the best way to do it? The gentleman on the right who asks, if it is constitutional for the State of Michigan to prohibit marriage under those conditions, has propounded a question that I have not heard answered satisfactorily to-day. There is a great deal to do if that law is passed, and if we devise a means by which we can positively say that gonorrhœa is no longer present in this young man, or that it is present, and the young man presents himself for examination and we tell him that gonorrhœa is present and he waits and comes again and keeps coming for four or five years, what is he going to do? Will he wait forever, or will he overstep? Will he give up the idea of ever getting cured and sink into his old habits? What will become of him? And there is another feature that has not yet been touched upon, and that is: What are you going to do with those fellows who get gonorrhœa after marriage? There are such people, even after two or three children have come to the family, gonorrhœa comes. Now, what are you going to do with those fellows?

We very often are obliged to add a little to the pile that goes to build a house by removing the ovaries from that man's wife. These conditions are all present in this moral society of ours. If this law will add one iota towards checking this condition and stopping this abuse, I say let us have it passed. If it will make it worse let us not have it passed. I would like to hear the expression of others giving their opinion of what the law will do. I understand it is now before the legislature.

Digitized by Google

DR. CAMPBELL, Detroit: There has been a great deal said during this discussion, and rightly so too, about the protection of the women of the community. Dr. Strangway has two girls; I have got a boy. I think if we take a vote upon this subject and recommend that a law be passed, in the judgment of this Section, that we should also add something as to the examination of the female before marriage as well as the male.

Now that, I think, is particularly true in the matter of syphilis; there is such a thing as the innocent inoculation of individuals with syphilis. I have had it come to me several times in my short career, to see and to treat several females who have been inoculated with syphilis innocently. It is not only primary inoculation, if I may so use the term, that should be looked after in this condition; but what are we going to do with those who inherit syphilis? Is it right for the subject of inherited syphilis to marry; will they produce any better offspring, or offspring that will give any more dignity to the state than those who are the subject to primary syphilis? What are we going to do with the widows? It is a well known fact that occasionally a female will marry twice. She may have contracted gonorrhœa, or she may have contracted syphilis from her first husband. What are we going to do with those people?

Then again, while we admit, and it probably is capable of demonstration, that our sex is the one that is most to blame in sexual matters, at the same time there are such things as females who are not sexually pure; I would not like to have my boy marry a syphilitic, one who is either the subject of inherited or acquired syphilis. I think if we take any action on this matter at all we should look after the examination of the female as well as the examination of the male.

DR. ROBBINS: I thank you, gentlemen, for your very full discussion. I want to say in regard to Dr. Howell's question that I believe that I am opposed to the bill that would be enacted at Lansing, for the reason that it is too utopian. I do not believe that the rank and file of the medical profession throughout this state—and it must be

Digitized by Google

borne in mind that in this society we have the cream of it — I do not believe the rank and file of the profession of this state are educated up to the point of diagnosing cases of gonorrhœa so that they can say with certainty that in all probability they are cured. When Dr. Wyman will say here before us that he thinks most physicians are satisfied with the stopping of the discharge, I think it is fair to say we have not yet come up to a state where we can say it is safe for a patient to marry. As I said in my paper, the fact that the discharge has stopped is no sign that the gonorrhœa is cured. On the other hand Dr. Wyman spoke of the case of a man who had gleet for forty years; that a man has gleet for forty years is no sign that he could not get married. A man may have a damaged urethra with not a gonococci in the whole urethral canal. It does not follow that a gleety man will infect the wife.

The point that Dr. Wessinger made is a strong one; it is one that appeals to me. It is true, however, that with careful, thorough, continual massage of the seminal vesicules of the prostrate urethra you can cure a very large percentage of these old chronic cases. I will admit that I am perfectly in harmony with him upon the point that there are some cases that cannot be cured.

The point of my paper was that of diagnosis as to the cure of the disease. How many men are there that can in a busy career make a proper examination? You cannot be satisfied with one examination; you cannot be satisfied with two examinations. In the first place the urine must be examined as it naturally comes; you must find out the point of the urethra in which the disease exists, the urethra must be examined with a urethroscope to find out if there is any spot that shows disease. If such a law as is proposed should be passed, we would have the same experience we now have when patients come to be examined for life insurance; the applicant stops and passes half his water before he comes in; he gives you the water and you find no pus, while if you had the first two teaspoonfuls you might have found that such a man was diseased. I could talk on the subject of gonorrhœa

Digitized by Google

for a week, it seems to me. What I want to urge is that we should use the uttermost care we can use with the amount of knowledge we have. It seems to me important that we should educate the physicians who come in contact with such cases as to the possibility of a much more careful diagnosis. To do so takes time and good instruments, a good microscope. You have got at least to have a oue-tenth oil immersion lens. We don't all have them. My appeal is, render the innocent woman immune, with all that that means.

Digitized by Google

TUBERCULAR OSTEO-MYELITIS

ANGUS McLEAN, M. D.,
Detroit.

In presenting this paper, I have nothing especially new to offer, but I wish to urge the importance of an early diagnosis in tubercular affections of bone.

Osteo-tuberculosis is essentially a disease of childhood and young adult life, and, in fact, may begin in utero. Though any of the bones may be affected, the vertebrae and femur are the favorite bony structures for invasion. This disease is usually secondary to tubercular deposit in some of the soft tissues, in the lungs and lymphatic glands most frequently. We leave out of consideration here miliary-tubercular myelitis which accompanies a general miliary tuberculosis. However, primary invasion of the bone seems to be a well established condition or, at least, tubercle bacilli have been demonstrated in the bone when they could not be found in any other tissue. Many authors maintain that the tubercle bacilli, may enter the circulation through the air passages or intestinal tract without any lesion of their lining membranes, while others still hold that there must be an *atrium* of infection though undiscovered. The presence of the bacilli in the bone without evidence of a tuberculous lesion elsewhere may be explained further if we accept the doctrine of Baumgarten which states that tubercle bacilli may be inherited and remain for an indefinite time within the body in a latent condition. Besides, a certain vulnerability of the tissues of congenital origin must be recognized as a cause.

That localized tuberculosis sometimes follows a slight trauma is a recognized fact, while it does not often follow a

Digitized by Google

a severe trauma or a fracture. The reason for this seems to be that an extensive trauma produces free circulation and exudation and does not predispose to the deposit of the bacilli, while a slight trauma furnishes the necessary *locus minoris resistentiae* for general establishment and proliferation of the bacilli. Hence these affections more often follow slight than extensive traumata.

The susceptibility of the young to this affection and of certain bones more than others has its cause in the structural growth. In the vertebrae primarily there are three centers of ossification, which grow rapidly until puberty, and it is before this time that the disease confines itself to the bodies of the vertebrae. Then the secondary centers make their appearance in the cartilaginous tips, and the transverse spinous processes. At about the seventeenth year the epiphyseal discs of the bodies appear and do not become completely united until the twenty-fifth year. The disease confines itself to the bodies, and as a rule does not attack the arches until after puberty. There are four epiphyses involved in the growth of the femur, one forming the condyles and three forming the upper extremity, one for the head, the greater and the lesser trochanter. Not only do we have these three epiphyses but also an apophysis, or the neck of the bone, which is an outgrowth of the shaft. It is in this particular that the femur differs from the other long bones. The ossification from these centers is complete about the twenty-first year.

As the tubercle bacilli usually select the epiphyses of the bone for their development because of the minuteness of the vessels in these parts and the constant cellular change, it only seems rational that they should prefer the vertebrae and the head of the femur where several of such unions are going on at the same time. We would not expect a primary focus in the femur after the twenty-first year for the metamorphosis by that time is complete, while we might expect such a focus in the vertebrae until the twenty-fifth year. The nearer the center of circulation the focus is located, the more rapid will be its growth. Those found in the shoulder or vertebrae are more rapid than those in the tibia and tarsal bones.

Digitized by Google

The general condition of the patient does not always give indications of bone tuberculosis. The disease may be present without any impairment of the general health. When situated in the extremities and uncomplicated, pain is usually the first symptom, and this is often referred to as being in the joint. It may be referred to some distant point as in tuberculosis of the head of the femur pain is complained of at the knee. It is intermittent in character and more severe during the night. Tenderness is not marked until the wall of the bone has begun to soften. If an area of tenderness can be detected around the epiphyseal line and no pain on movement of the adjacent articulation, disease of the bone can always be suspected and both extremities should be carefully examined. Swelling does not take place until the compact layer is perforated and the periosteum bulges. The involvment of the other tissues soon follows. Redness is not present until the affection extends toward the surface. Atrophy of the limb is an important symptom and takes place from a few weeks to a month or two after the beginning of an attack.

When the disease attacks the vertebral column before puberty, it is usually confined to the bodies of the vertebrae. Frequently the first symptom detected is the attitude of the child and its attempts to refrain from vertebral motion. The disease being confined to the bodies, little or no pain can be detected by pressure over the arches while on sudden or jarring motion the child complains of pain. In young adult life when the disease has affected the arches, pain can be elicited on pressure.

No definite line of symptoms can be set down, the only difference between a primary osteo and a primary synovial affection being the points of tenderness around the epiphyseal margin. The disease attacks the lower extremities much oftener than it does the upper, and more frequently the epiphyses than the synovial membranes in the proportion of three or four to one.

In some cases quite extensive inflammation may take place without producing any noticeable symptoms. The fever thermometer is frequently a great aid, for the slightest tuber-

Digitized by Google

cular affection has its evening rise in temperature although it may not be more than half a degree. In all cases the family history should be carefully inquired into and a careful search made for lesions in any other parts of the body. In doubtful cases certain diagnostic measures should be resorted to in order to obtain a satisfactory diagnosis.

Tne exploratory or aspirating needle may be used, the bone having become softened by the disease so that its external layer may be perforated with little pressure, this of itself being of diagnostic value. If a focus is found, a portion of its contents can be removed and subjected to bacteriological examination. Roechet has recommended ignipuncture which is performed with a heated needle point of a Pacquelin cautery, the needle penetrating the external tissues over the point of greatest tenderness. When the bone is reached, the needle is advanced by rotary movements so as to prevent its impaction. A focus can be detected by the sudden loss of resistance. The ignipuncture has a therapeutic as well as a diagnostic value.

The treatment is constitutional, mechanical and operative, the last being of special benefit when the bones of the extremities are affected. There is little opportunity for operative interference when the bodies of the vertebrae are invaded, excepting that of aspirating or freeing an abscess cavity of its contents. To receive benefit from the constitutional and mechanical treatment, an early diagnosis is of the greatest importance. It is much easier to prevent a spinal curvature or deformity than it is to relieve one after it has taken place. A plaster of Paris jacket, a brace, or splint applied so as to support the spine and keep it at rest, the administration of constitutional remedies, with good hygienic surroundings, persisted in for two or three years will terminate many cases favorably.

Under this regime disintegration may be arrested and an osteosclerotic wall formed around the focus which may remain latent or undergo calcareous degeneration. The same method is applicable to affections of the extremities but they are more amenable to operative treatment. When the lesion is

Digitized by Google

entirely removed and the wound closed, there need be no further anxiety of the adjacent articulation becoming invaded, or of secondary infections of other tissues of the body.

I have specimens here of the lower portion of the shaft and upper extremity of a femur affected by diffuse osteo-myelitis. At the time of the amputation, the bone was a fine example of the four stages of tubercular degeneration as described by Koenig; that of granulation, caseation, necrosis and liquefaction. The cancellous tissue of the lower extremity was completely destroyed, the thinned compact layer forming the wall of an abscess cavity. In the upper extremity can be seen points of caseation and necrosis.

The patient from whom this was removed is a young lady about twenty years of age, with a tubercular family history. Her right axillary glands became affected about three years ago. These were removed and she afterward enjoyed good health until about fifteen months ago when her knee began to pain her. She was informed of her trouble at the time and advised to submit to an operation. She would not consent to operative treatment at that period, and came under my care about two months ago with an affected and enlarged knee-joint, having been able to walk until that time.

It was thought that an excision of the knee-joint would be sufficient, but after exposing the bone this condition was found and the only way of removing the diseased tissue entirely, was by amputation at the hip joint. She made a good recovery and is now quite well.

If this lesion had been removed a year ago, and the cavity treated by iodoformization or with bone chips after the method of Senn, this young woman might still be in possession of a useful limb. Osteo-tuberculosis progresses slowly, and the date of its commencement cannot always be marked. but if its progression is unmolested, death is about as certain as when we have a malignant growth, and its early diagnosis is almost as important as that of cancer.

Digitized by Google

DISCUSSION.

THE CHAIRMAN: This is certainly an interesting paper and one that everybody in the room ought to know a great deal about. It is now before you for discussion, and I would like to hear from somebody outside of Detroit and Grand Rapids.

DR. STOCKWELL, Port Huron: I am somwhat interested in this subject on account of a peculiar case that came under my care recently, the autopsy I made only within two or three weeks. A lady four years ago, complained of severe pain in her right arm and shoulder. After a time it became more fixed, although to the end of her life she had a movement of thirty degrees backward and forward and outward from the body. Three years ago she noticed a tumor in the left breast, but paid no attention to it. About one year later, that is the second year from the beginning, my attention was called to it. As I had no doubt about its being a scirrhus I operated and found the diagnosis correct. Just before the operation she called my attention to the right breast also. In that there was a little tumor, the size of a large horse chestnut. On opening it I found a walled in cavity containing a broken down grumous material. I curetted it thoroughly. Both breasts healed by first intention. The year following (one year ago) she still complained of pain in the right shoulder, her right hip also became affected. She was having more or less fever and was a little delirious. The etiology sounded somewhat obscure. She gradually recovered, however. Towards the end of her recovery my attention was called to a depression in the forehead. I found the left frontal bone where it was covered by her hair had absorbed over an area two and three-eighths by one and one-half inches. Two or three other areas of bone absorption, less in size,

Digitized by Google

were also found on the skull. The absorption had been attended with no pain or swelling.

The disease in the right shoulder, which had existed for four years, had produced a flatness in the outlines of this shoulder as compared with the left. When she was able to be removed from her bed found the right leg two inches shorter from absorption at the upper end of the femur. The disease affecting the bone had evidently produced a dry caries. A few weeks since the patient died. On examining the upper part of the humerus, I found that flattened to one-half its usual thickness and hardened; the articular surfaces had not been impared by any bony ankylosis. In removing the arm from the dress sleeve with a traction force of perhaps fifteen pounds, the humerus was broken just below its head. I found considerable caries at this point. The calvaria showed complete absorption of both tables of bone in places. The origin of the caries was undoubtedly tubercular to the source of infection. I found, by inquiry, that seven or eight years this patient had nursed her son-in-law who was then at her house and who died there of tuberculosis. Since that time she has never been a perfectly well woman, yet it was three years after that before she dated the beginning of the trouble with the arm. The interesting thing about the skull is that the disease was not attended with pain or swelling.

THE CHAIRMAN: They say tuberculosis is quite prevalent in Michigan, and we ought to know something about it.

DR. ————, ————: I have been very much interested indeed in listening to this paper by Dr. McLean; it is a subject which I think all of us have had certain experiences with, and I do not believe it is a very difficult matter for the ordinary physician to diagnose a case of tubercular osteomyelitis. I have seen several cases, and I think that a general history is almost conclusive, when we find in such a case the symptoms which have been designated by Dr. McLean, accompanied by little fever, I think it is almost certain, nine times out of ten, that we can attribute it to tubercular origin. I have one case where a man happened to slip and broke his leg very lightly at the knee joint, and on going into the joint,

Digitized by Google

which I did, after a certain time, I was able to find that for a space of six inches the bone had become almost absorbed and what was there was simply a honeycombed condition; the young man had a certain amount of fever, some pus formed, exuding out through several fistulous openings. I found after curetting it, and getting out all the bone possible, there was still enough left to form a nucleus around which a certain amount of bone formed, and he afterwards got a good leg. The question of this kind of trouble—any tubercular trouble, as we discussed in the paper previous to this—might be legislated upon, and it may be that certain diseases could be legislated out of existence. The discussion was good, and almost everybody paid attention to it, but I believe if we should try to legislate on one subject, we would find we could not confine ourselves to that particular subject; we should go outside and not confine the legislation to one, but should include all. If we can find a disease which causes a greater percentage of deaths than that of tuberculosis, in the State of Michigan, I think it would be well for those who know of such a disease to produce the figures. Gonorrhœa, with all its troubling phases, seldom ever causes death, or is it transmitted from father to son, or mother to child, nearly as much as tubercular trouble. I believe, if we are to go about to prevent disease by legislation, that we cannot stop with the subject of gonorrhœa, but should go farther and make it imperative on every one who shall apply for a license to marry that he should be examined not only for gonorrhœa, but for other troubles that we know are transmitted, and I think the subject of disapproval of marriage by tubercular people is one of the subjects which will come up in the future. We know that in Germany and England they are trying to establish hospitals to control these diseases as much as possible. In some countries the privilege to marry by tubercular people is now a question before the people. I do not see why the people of Michigan could not, if they would try to, legislate against this disease. I would have a very great preference to legislating against tuberculosis, and I would be favorable at some time in the near future to the idea that the doctors of Michigan

Digitized by Google

should gain some access to the legislative laws and make it imperative that no one suffering from tubercular trouble, in any form, should be allowed the privilege of marriage.

DR. PARKHURST, Middleville: The question is asked, what is the effect of anti-tubercle serum or tuberculine?

I have seen anti tubercle serum used in two cases. It produced alarming reaction. Until we know more about its effects, and have had more favorable reports of it, I would prefer that someone else do the experimenting.

DR. HAUGHEY, Battle Creek. As remarks are called for outside of Detroit and Grand Rapids, I assume to take the floor once more, not to talk very much on the paper, however. It was a fine paper and well given, but I would like to mention a couple of cases which came under my observation, and two is all I will ask to mention. About five years ago a lady and gentleman came into my office one evening; the lady had her arm done up and stated she had been treated for rheumatism. The history of the month before was that she had fallen from a bicycle and hurt her arm a little below the elbow, and the doctor who had been attending her realizing there was a *hurt* there treated it for rheumatism. It got no better and a *pain* developed in the elbow joint, an *ache*; the joint was very tender but there was no soreness at the point that she first complained of hurting, any more, but the joint was tender; there was loss of motion, it was rough, it grated, it was swollen and red, and there was fluctuation. On aspirating the joint some time later, a purulent fluid escaped; not thick pus but a thinnish purulent fluid. The patient was taken to the hospital, a resection of the elbow joint made and the end of the humerus, head of both tubercles, were sawed off, and the upper ends of both the lower bones were sawed off. They were carious, they were rough, there was no cartilage there any longer. She made a good recovery. There is a little movement of the arm yet, not much; she has since been married and has one child about three years old. The question in my mind is whether it was tuberculosis or not. There was no history of tuberculosis in

Digitized by Google

the family that I have been able to find, but there was the condition and the treatment and the result.

Another case which I saw a few months ago: a boy eleven years of age had been treated when he was a child about six months old for rheumatism in the right leg, from which he appeared to recover. About two years ago it developed again and he was treated by another physician for rheumatism, and treated for a long time, and finally the swelling came above the knee and broke on the inside; I was called and found great thickening of the whole femur and a large amount of pus, but the principal thing for which I was called that night was to see what was the matter with the boy; he had suddenly developed a high fever, an eruption came out on the skin; it was a different eruption from any ordinary one; there was a great deal of redness with a large number of minute white points with pus in each point, and I diagnosed pyæmia. In looking the child over more closely I found that he was secreting and passing by the urine, a large amount of albumen; that the liver was enlarged very much, was sore and tender, that he preferred to lie on the right side altogether. His leg was congested upon that side and full. I hardly knew what was the best thing to do. We took him to the hospital, gave him an anesthetic, opened the leg, curetted it out, and failed to find any opening on the inside of the bone at that time although we were sure it was there. The child's condition improved, the temperature came back to normal, the opening in the leg began to close up. I was called again and reopened it and then found an opening into the marrow on the inside of the bone, curetted out all I could also of the diseased portions of the bone. The boy at that time was very weak, so weak that the physician who gave the anesthetic the first time declined to give it again for fear of death from anaesthesia; therefore an amputation was not undertaken. He lived along a week or two after that and died. A post mortem was had at which I was not present, but I was told by the mother of the child that they found the kidney very much diseased, the liver diseased and the right leg diseased: those things I knew were diseased,

Digitized by Google

but what the trouble was I did not learn. I found no history of tuberculosis in his case, but I did find what I believe was a history of inherited syphilis.

DR. HAZE, Lansing. I would like to make a few remarks in connection with this, concerning a case which occurred within the last three weeks, and which I think quite appropriate to come under this head. The case was very interesting to me and to the other physicians in the case, and I think would be of considerable interest to this Section.

It was a case in which another doctor and myself were called into consultation about ten miles from Lansing, and the physician who had the case for the preceding thirteen weeks was there also. The patient was forty-three years of age, and gave a history of pain in and about the hip joint for some five years preceding that, and I heard no mention of anything by the doctor or any member of the family of any trouble except rheumatism, which seemed the accepted diagnosis. At that time the man had fallen in getting into a wagon and struck upon the tire on the affected hip, and sufferred what the doctor said was a fracture, and what seemed to be a fracture in connection with other injuries. He had put him in bed and put a pulley weight on him, but the leg began to shorten and it shortened three inches in the thirteen weeks; and the cause of that was,—the doctor who had attended him, stated,—that when he drove around occasionally he found the weight off and lying on the chair. The leg seemed to present a perfect picture of hip joint dislocation. We found the above mentioned shortening of the whole leg, and found an inch and a half shortening of the femur itself, and it was very difficult to render any decisive judgment about the fracture or the extent of it, although there were several things pointing to it. In connection with this I would like to mention that he had a growth in the testicle, very firm, unyielding, which the doctor called our attention to. We advised that he be brought to Lansing to a hospital where we could work to better advantage, and on the following Monday he was operated upon, and we found the entire upper third of the bone almost disintegrated and broken all

Digitized by Google

to pieces from the tubercles, and a honey-combed condition of the bone. As far down as we had time to work it was defective, but not as serious as above. The head of the bone was slightly out, so that there was a kind of a combination of conditions, and very interesting ones as far as that was concerned, and it was a surprise to all parties, and to a certain extent it threw some light on the condition of the testicle, and we now better appreciate the influences of the tubercular process which had been so generally attributed to rheumatism. I will simply remark the patient lived only about four hours after the operation.

THE CHAIRMAN: Dr. Haze's case is an interesting one and a clear one. I think his case was a case of tubercular osteomyelitis.

As to the temperature in these cases: I do not think we pay quite enough attention to our thermometer in these cases; it is an index of all cases of tuberculosis, the pulse not so much so, of course.

DR. LOWRY, Hastings: I have repeatedly found tubercle bacilli when the case has run week after week without a fever.

DR. GRAVES: What was the outcome of these cases ?

DR. LOWRY: One case that I have under observation now is still living and it is about three years since I first found the tubercle bacilli.

THE CHAIRMAN: Dr. Wyman has made a special request that we hear his paper at this time, and if there are no objections we will call upon Dr. Wyman.

Digitized by Google

SOME FEATURES OF SURGICAL APPENDICITIS.

HAL C. WYMAN, M. S., M. D.,
Detroit.

It is unfortunate but true that surgery does not cure every case of appendicitis.

More cases are cured nowadays than were cured formerly. The number of failures is growing constantly smaller.

The technique of the operation is steadily improving. The judgment and resources of the surgeon are increasing.

There are two kinds of surgical appendicitis, viz: one that gets well after any and every operation, and another that dies in spite of an operation.

Now, this classification has nothing to do with the cases in which operative proceedures are not needful and in which the medical or drug treatment meets all the indications and secures the recovery of the patient.

There are some features of surgical appendicitis which are so constantly present in adverse cases that it is worth while to call attention to them and indicate a remedy.

Obstruction of the bowels after the operation and obstruction of the bowels at the time of the operation are probably the most common features in fatal cases.

When symptoms indicating arrest of the intestinal stream appear any time after an operation for appendicitis it is necessary to reopen the wound and search for the causes of obstruction.

These may be several. Gauze packed around a drainage tube may compress the intestine; abscesses may exist between coils of intestine where they have been overlooked until the symptoms of obstruction make a second operation necessary.

Digitized by Google

Both old and recent adhesions—inflammatory exudates—may compress or strangle a loop of intestine.

The remedy for these faults is found sometimes, but with great difficulty generally. In some instances there is great distention of the intestine with gas. Apparently the bowels do not move because they are paralyzed. If one taps or cuts a distended coil under these circumstances the gas will escape and sometimes the patient will be saved.

If there is much distention of one portion of the bowel and collapse of another portion, then an opening should be made in the distended gut and it should be stitched to the parietal peritoneum and an angle of the wound so as to make a fistula-enterostomy.

The poisons retained inside the obstructed bowel should have a channel for their discharge, otherwise they invite death, as they are regurgitated upwards toward the stomach. It is the black vomit that kills in cases of obstruction of the bowels. When obstruction exists at the time the operation for removal of the appendicitis is performed, an intestinal fistula should be made if there is any doubt about the causes of the obstruction having been removed.

Septic symptoms may continue after an operation and destroy the patient. Generally there is an abscess somewhere in the peritoneal cavity which was overlooked in the original operation or which developed subsequently.

It must be searched for. In one case after a large gangrenous appendix was removed with a copious evacuation of pus, the septic symptoms continuing, I pushed my finger up behind the ascending colon to the inferior border of the liver and evacuated a large abscess. After that the progress to recovery was uneventful.

But, when there is no abscess to open, no tympany to tap, no adhesions to separate, and the bowels were open, still the pulse is rapid, the respiration quick and the skin clammy and livid, good may result from the administration of infusion of chamomile in half oz. doses, with a half pint of salt solution by the mouth every two hours; and enemas of warm saline

Digitized by Google

coffee, (strong coffee decoction one half pint, chloride of sodium one half drm.) every three hours.

These agents will dilute the poison in the blood and favor its elimination. Heat externally to the extremities and over the heart and stomach are most valuable conservers of vital energy.

I regard these internal and external agents as most useful in tiding a bad case over a weak place, and equally as valuable in their field, as the surgical measures I have advocated for other features of surgical appendicitis.

Adhesions between intestine and omentum, abdominal wall and bladder, and other of the intra-abdominal viscera must be separated in so far as is practicable to separate them in order to release an obstruction of the bowels.

In doing this work an intestine may be torn and need to be repaired by suturing, but usually this accident will not occur if the point of the finger is worked gently along the line of least resistance—the natural cleavage of inflammatory deposits.

And if the resistance threatens the wall of the intestine it is best to stop trying to release the obstructed bowel, and resort at once to enterostomy. That will relieve the urgent symptoms and give opportunity for time to absorb extensive inflammatory deposits.

The fistula usually closes spontaneously as soon as the bowels resume their natural movements. But occasionally the reverse results and the fistula persists, adding another very annoying feature to surgical appendicitis.

It can be remedied usually by a very simple and safe operation. Put a small probe in the fistula for a guide. Then carefully cut through the skin and layers of the abdominal wall around the fistulous canal down to the peritoneum, leaving a cylinder of tissue about the fistula. Now locally pack the wound around the cylinder with gauze and take out the probe. The fistula cylinder will drop down an inch or more and the intestinal contents will be undeflected in their flow through the natural channel.

In a few days the fistula closes if there is no intra-intestinal pressure to keep it open.

Digitized by Google

A spontaneous intestinal fistula as a feature of surgical appendicitis is quite a different thing. It sometimes results from a slough of the intestine, and sometimes from a tear.

It may have its internal opening deep among the coils of bowels, and have a very tortuous channel, but in its treatment the safest and surest plan to follow is one which seeks to release the external opening from attachment to the external skin and muscles and favors cicatrical contraction by yielding the abdominal peritoneum so that the intestine will be void of deflecting spurs.

Some idea of the extent of the deflecting spur and the degree of intra-intestinal pressure above it, may be gained from the amount and character of the discharge. The greater the discharge of intestinal contents the more freely must the abdominal peritoneum be separated from the transverse fascia.

Intestinal anastomosis may be practiced for cure of fistula, the internal opening of which is very deep and the canal very crooked.

The method I have used is carried out as follows: Open the abdomen on a probe inserted into the fistula for a guide. Make the opening large enough to give free access to the intestine, where the fistula issues from among them. Next, following down the fistula, open the first intestine to which it is adherent, by an incision one inch in length parallel with the long diameter of the bowel. Then cut away all of the fistula exposed and open an adjacent loop of bowel the same length and fasten the two openings together by a running suture continued around both wounds. This will bring the external orifice of the fistula into the lumen of the intestine where it can no longer be a source of irritation and distress to the patient.

Digitized by Google

DISCUSSION.

DR. GRAVES, Grand Rapids: I want to compliment the doctor upon his paper, and say that I am very glad to have listened to it. It is an intensely practical one, and I think no surgeon can listen to it without benefit to himself. The first noticeable thing in the paper is its title "Surgical Appendicitis," and I think it announces the fact that the time has come when the dogmatic statement to operate as soon as the diagnosis of appendicitis has been made, is past. It is conservative. Conservatism is in harmony with true progress. I very well remember an obstruction of the bowels in a case of appendicitis that I operated upon some hours afterwards; it was a beautiful boy who was suffering with this trouble. Although I made an enterostomy in a central incision, he died. It is, of course, the operation to do.

I want to again compliment the doctor and say that I am personally benefited by having heard his paper.

DR. REYCRAFT, Petoskey: This is too serious a subject to be allowed to be passed undiscussed, and as no one seems willing to discuss it I would like to make a few remarks upon it.

Living as I do in Northern Michigan, I have very few of the advantages that some of the surgeons have in the lower part of the state, of taking their patients to the hospital and having them operated upon and being assisted by several physicians. It makes us very conservative in operating on such cases. I have had occasion to make an operation for appendicitis, but most of our cases are allowed to go unoperated upon, and I must say this that out of the number, a dozen or fifteen cases, which I have seen in my practice, I have only seen one case die, and that case was not operated on. I had a case this spring, the patient did not live in my

Digitized by Google

town but lived some fifteen miles away; he was not very easy of access and was allowed to run several weeks; it was a poor family, and I was compelled finally to operate upon it by putting in a drainage, etc. In operation, of course, for appendicitis, I always thought best, before the operation, to get the bowels freely opened, and what the doctor stated about the case of the bowels distended, I could hardly ever see my way clear to going into an abdomen, greatly distended by gases. As far as abscesses forming around the intestine causing obstruction afterwards, I do not know that I ever thought of it in that light. I could hardly conceive of an abscess being so great as to press so heavily upon the intestine; if it could be so it would be a new thought to me in that line.

I could readily conceive of somewhat of a temporary paresis of the bowel following such an operation, causing quite a shock to the intestines, and I could conceive of that causing death. With these few remarks it is as much as I can see in that operation to make remarks on at present. I can hardly conceive of operating on a case while the abdomen is greatly distended. I endeavor to get the abdomen reduced before an operation.

DR. CRANE, Kalamazoo: Dr. Wyman spoke of the "drug treatment" in certain cases of appendicitis. I have a curiosity to know what Dr. Wyman would consider a proper medical treatment from the surgeon's standpoint.

DR. WYMAN: I am much obliged to you for your liberal discussion, and I am exceedingly regretful that the questions come in a difficult form to answer. Unfortunately my experience with appendicitis has been in cases where the hope of relief by means non-operative has failed, such cases have been in the field of last resort, consequently I could not go on and tell you what would be the very best line of treatment by the use of drugs. If, however, the case is getting well, no matter what the treatment has been, the bowels moving freely and the temperature disappearing and the tenderness gone, I certainly should not think of advising any other plan of treatment. It is that type of cases to which I do not refer in my paper.

Digitized by Google

In making the distinction from cases that recover, I can only speak for myself without reference to the work of others, particularly on this occasion, and simply state what is my individual guide in the matter, and that is developed more by what I feel when I make the physical examination. In a person sick enough to need the attention of a doctor, and a consultation, you can use your imagination as to the symptoms that would render a man ill enough to make it worth while for the physician in attendance to ask for further consultation and advice; if on such an occasion we found the evidence of a lesion, the duty of the surgeon is to get rid of it. Now, the paper deals only with this type of appendicitis which I classify as "surgical," and the features of it I mentioned clearly, or tried to. Many of the cases die, and the paper is simply a resume of measures which may be resorted to with the hope of saving some of them. Now my observation and experience lead me to feel that obstruction of the bowels is the thing most to be dreaded. My cases have not all been in hospital practice, not by any means. I have not been an advocate of the removal and conveyance of patients from their homes to the hospital for operations for appendicitis; perhaps largely because of the fact that the type of cases I have seen have been in my judgment too ill for transportation. This condition of obstruction I have found not infrequently. Sometimes it is ushered in with approaching impending collapse, and in that type of cases it is plain to any one that unless something is done and done right away, death will come, and sometimes it does anyway. I advocate these measures which are absolutely sure and safe and which sometimes do save life.

Replying to the remarks of Dr. Reycraft: It is astounding what abscesses we may find, and I think in these extreme cases—and as the doctor remarked, the number which he has seen has not been very extensive—if he had opportunity for examining some of those who died I have no doubt he would have found very considerable abscesses, large enough to completely obstruct the bowel, not only by the compressing lesion, but by the abscess wall or deposit that is in con-

Digitized by Google

nection with that way. What we might call "technical skill" is to be found in the separation of the lesion; I believe that to be an art by itself based upon wide experience.

Nature makes an effort to take care of the tumor, nature begins working the masses together; she may close it up accurately, and in doing so throw out considerable material.

I know early in my work I was exceedingly apprehensive lest I might tear down the barrier, but when I see my patient with the symptoms of obstruction and my judgment tells me that that obstruction is due in some way to that wall or barrier, I feel it my duty to make a way through; and I found it oftentimes not a very difficult matter to execute. It does not require evisceration, but merely a small wound, the finger passed along the line of least resistance; just where that is I cannot say, but you can tell by the feel, anyone of you can. I think in that direction is a line which is worthy of research and of effort; not claiming gentlemen, understand me, upon that point, that these measures will cure all the cases, but I think some of them will be cured if you will take the pains to practice it. Then as to this matter of the fistula: Perhaps some of the views introduced there may be new; I do not know why they should be, but almost before I had realized what appendicitis was I had a case of fistula near the umbilicus which followed a case of severe inflammation of the right groin. I had atten led the patient through that which lasted about a year and a half, off and on. This fistulous opening appeared near the umbilicus, and I always fancied something had broken away into the wall of some of the intestines, and I tried to close it up, and invariably it would break out. I think I tried to close it up a dozen times, hoping the next time would be the successful one; after a consultation with a doctor, whose name I do not now recall, but who was professor of surgery and was a relative of this patient of mine, I opened the abdomen and tried to find the internal opening of the fistula, and to sew up the hole in the gut. I simply could not find it. I probed down a certain distance, and turned the probe over to crowd it a little further to reach the internal opening, but to find

Digitized by Google

it enclosed. In that case I put the peritoneum carefully back to the margin of the fistula so the contents of the bowel would not be poured into the peritoneal cavity, in accordance with well known principles laid down at that time for the treatment of abscesses in the peritoneal cavity. It was satisfactory so far as the operation was concerned; my patient did not die, the wound closed. There was some improvement following that operation, enough so that I felt constrained to repeat it by simply releasing the peritoneum from its attachment with the abdomen, and I practiced that method several times upon the patient and finally it closed, and I think in consequence of relaxing the peritoneum which allowed of contraction.

Then this other measure spoken of later grew out of a desire to close certain other fistulas in which this plan had failed, notably one; for several months the patient discharged practically all the contents of the intestine through a fistulous opening. The method spoken of has failed in every instance, in every case heard from the fistulous opening would be there. I opened the abdomen as I have laid down in the paper, I cut an opening into the intestine, cut off the fistular growth and opening, and I never heard of the case afterwards. I thank you.

Digitized by Google

CYST OF THE PANCREAS FOLLOWING TRAUMA.

J. VAN DER LAAN, M. D.,
Muskegon.

Growths, malignant or benign, pressing upon or involving the excretory duct of this gland, thereby causing retention of its physiological secretion with probable cystic distension of its capsule, are excluded from consideration in this paper; and it is proposed to limit the discussion to such cysts of this organ as are preceded by a history of mechanical violence in this region, and offering strong presumptive evidence of being due to such violence.

That this gland lying as it does, deeply in the upper abdominal zone, and apparently well protected from mechanical injury, should at times be subject to violence, which may so seriously interfere with its normal functions as to materially affect the health of the subject, seems on superficial examination quite improbable. On little reflection it will be noted, however, that under favorable conditions, when the stomach is empty and the body is in a position whereby the abdominal muscles are relaxed, a severe blow, fall, or impaction at this point between two opposing forces may so affect the pancreas as to crush or bruise its structure, rupture its main or lesser ducts, dislocate it, or displace part of the gland, and, if the displaced part forms an acute angle with that normally situated, partial or complete obstruction of its duct at this point is inevitable.

Pancreatic cysts of the above etiology, Senn regards as invariably true retention cysts, whose contents, when recent, is pure pancreatic juice, which in process of time may undergo various physical and chemical changes, by reason of in-

Digitized by Google

flammatory processes of the diseased organ in whole or in part. In recently formed cysts, the sack is thin and delicate, especially so when greatly distended or of rapid development. Its outer layer consists of peritoneum, its inner is soft and smooth. In old cysts, where the cyst wall has undergone various inflammatory and other changes, it is apt to be hard and thick, and may become cartilaginous or ossified.

The important and practical subjects of diagnosis and treatment, require pains taking and, oft times, prolonged consideration, especially so when an attempt is made to differentiate this lesion of the pancreas from other conditions not infrequently met within this region of the abdomen.

Solid growths in this neighborhood, as a rule, present such differences in their physical characters that they need not be considered as offering any real difficulty in diagnosis. The diseases mcre apt to give trouble in point of diagnosis are:

(1) Cystic disease of the gall bladder, (hydrops fellae vesicae).

(2) Echinococus cyst of the liver, spleen or peritoneum.

(3) Localized peritonitis with effusion.

(4) Ovarian cystoma.

(5) Aneurysm of the abdominal aorta, or mesenteric vessels.

(6) Enlargement of the lymphatics with cystic formation.

(7) Hydro and pyonephrosis.

(8) Cystic disease of kidneys or suprarenal capsules.

Inflammatory exudates, either with or without the formation of pus, will seldom give difficulty in diagnosis—being differentiated from the non-inflammatory formations, here as in any other part of the body, by the usual signs of inflammation—fever, pain, etc. It is possible, however, that pus may be found without giving rise to elevation of temperature as for instance in the case of Walsh, Med. News, Dec. 30, 1893; but such occurence is so unusual that it need not be considered, and when found, treatment would be identical.

It is exceedingly important to differentiate pancreatic cyst, whether recent or of slower development from malignant disease in this region. The most important factors in a differential diagnosis are: (1) the history of the case, in one, pre-

Digitized by Google

ceeded by injury or attack of colic (when due to impaction of a calculus in the pancreatic duct) in the other absence of such injury or attack; (2) by the shape and character of the growth—being large usually distinctly fluctuating and commonly monolocular in the one with considerable mobility and smaller, often multilocular rarely distinctly fluctuating and more or less fixed in the other; (3) by the rapidity of the growth—a pancreatic cyst attaining in a few weeks the size which even in malignant disease would require many months, and finally, (4) by the effect it produces upon the general organism—impairing health and nutrition, in case of cyst, little as compared with malignant disease.

(1) Enormous distension of the gall bladder—hydrops fellae vesicae—such as are recorded in medical literature, where the cyst occupies the greater part of the abdomen, must of necessity offer great difficulty in diagnosis. With a reliable history of the case, gall bladder distension will be found to have started in the right hypochondrium, whereas, pancreatic cyst makes its appearance first in the left hypochondrium or epigastric region. In gall bladder disease the colon is usually anterior, in pancreatic cyst below and in front of the growth.

(2) Hydatid or echinococcus cyst of the liver, spleen or peritoneum are slow in their progress, and have no history of preceding injury or attack of colic; however, in case of slowly developing pancreatic cyst from partial obstruction of the duct of Wirsung or some of its branches, and where the cyst wall has undergone proliferative changes, it will be impossible to arrive at a definite diagnosis. This is of minor importance, however, for both diseases require practically the same surgical treatment.

(3) Localized peritonitis with effusion, when met with in this region of the abdomen is to be differentiated by the history of an acute peritonitis—pain vomiting, fever, probably constipation and tympanitis—often preceded by some definite lesion of one or more viscera.

(4) Ovarian cystoma when large and not accompanied with an intelligent history, is most difficult to differentiate from

Digitized by Google

pancreatic cyst as is proven by able and pains taking surgeons, who have operated upon pancreatic cyst for ovarian cystoma, and only discovered their mistake during the progress of the operation. Ordinarily there need be no difficulty in arriving at a satisfactory solution especially when an intelligent history of the case is obtainable. The position of the abdomen first invaded, displacement of colon, presence or absence of growth by vaginal touch sufficiently differentiate between the two diseases.

(5) From aneurysm of the abdominal aorta or mesenteric vessels, pancreatic cyst is known by transmitting the aortic impulse in only one direction, which impulse will entirely disappear when patient is made to assume the genu pectoral position. Moreover, aneurysmal tumors may be made smaller by compression, and usually give the "bruit" on anscultation, both of which signs are absent in pancreatic cyst.

(6) Enlargement of retroperitoneal lymphatics with cystic degeneration, will scarcely offer difficulty in diagnosis, as the fixed location, modular character, comparatively smaller size, and except in extremely rapidly growing malignant disease, slowness of growth, with probable evidences of similar changes in neighboring lymphatics or other tissues will sufficiently differentiate between the two conditions.

(7) Hydronephrosis, pyonephrosis, cysts of the suprarenal capsules, may offer difficulty in diagnosis, but all of these conditions are apt to develop from the side and extend toward the median line, are usually situated lower down, and, in case of hydro and pyonephrosis are preceded by a more or less definite history of kidney lesion or calculi.

The most characteristic symptoms of pancreatic cyst, such as are of a size to be operable, the following deserve attention: history of an injury in this region or severe attack of colic; smooth globular cyst, certainly fluctuating when of recent date, and appearing in the epigastric or left hypochondriac region, crowding the stomach up, displacing the colon downwards, following slightly the respiratory movements; skin of the body of a peculiar dirty sallow color; little if any pain; no very serious impairment of nutrition, except as due

Digitized by Google

to digestive derangement occasioned by the pressure of the growth.

Given a case answering in the main the above description, what is a physician to do? Such a case in my opinion, demands a coeliotomy, even if the diagnosis rests between pancreatic cyst, hydrops fellae vesicae, echinococcus of the liver, spleen or peritoneum, ovarian cystoma, cysts of the kidney or suprarenal capsule; any and all of the conditions require the same treatment, at least in so far, that an exploratory laparotomy is indicated.

Herewith I append the history of a case of pancreatic cyst which came under my treatment in the spring of 1896, and of which the following are the more salient features:

On Dec. 3rd, '95, I was called to see J. D. J., aged 9, whose father related that the boy while coasting down a steep hill had fallen from his sled, and, while lying on the ground, was run into by the sled of his playmate, forcibly striking him in the region of the stomach and knocking the unfortunate boy "out of wind." He was removed to his home about three blocks distant, where I found him some two hours after receipt of the injury. Boy was still profoundly shocked, complained of much distress in region of the stomach and umbilicus and was vomiting. There were no signs of internal bleeding, and nothing which to my mind required operative interference. There was no bloody urine, bowels moved next day, but nausea and vomiting continued; fever, if any, slight, no evidence of peritonitis. Gradually vomiting eased up, but boy's general nutrition remained impaired. I did not see case again, after Dec. 24, till March 31, '96, when the father brought him to my office to get my opinion of a large tumor, which had appeared about three weeks before, and was rapidly growing. Divesting the boy of his clothing, the abdomen was noticed to be markedly enlarged by a smooth but tense growth in the left side of the epigastrium and which gave unmistakable evidence of fluctuation. The tympanitic colon was recognized below, the stomach resonance above it; breathing was short and largely costal; heart somewhat displaced upward, and tumor appeared to be influenced by the

Digitized by Google

respiratory rythm. Boy was still pale and looked ill, no rise of temperature, appetite impaired, food causing distress from distension, which was promptly relieved by vomiting. Tumor was not painful to the touch, nor had it given evidences of pain during its rapid growth.

Remembering the accident of the preceding December the rapidity of its growth, its position, physical characteristics, and its surroundings, a provisional diagnosis of pancreatic cyst was made. Next day, April 1st, with my friend Dr. F. W. Garber, the boy was visited at his home, and again carefully examined. To make matters more definite, it was proposed to withdraw some of the fluid contents of the cyst, which might give valuable information as to the nature of the growth. Accordingly a hypodermic needle, properly sterilized, was introduced at the most superficial part of the cyst, and about two c. c. of fluid withdrawn. On arriving at my office part of the contents of the hypodermic syringe were added to a solution of boiled starch water, and Fehlings test applied after a few minutes. An abundant reduction of the suboxide of copper proved that a large part of the starch solution had been converted into grape sugar, and that whatever else the cyst contained, it was certain that the amylolitic ferment of the pancreas was actively present. There was now, therefore, no longer any reasonable doubt as to the nature of the cyst, and operation was agreed upon and set for the next day. About three hours after we had left the home of the patient, his father came to my office, telling me the boy was feeling very ill, had had a chill, was vomiting, had great pain in lower abdomen, and that the tumor had disappeared, and requested me to see him as soon as possible On arriving at the house, I actually satisfied myself that the tumor had disappeared, found the abdomen painful, the boy vomiting a greenish substance, temperature 102°—in one word all the symptoms of an acute peritonitis were present. It at once dawned upon me that the delicate cyst had thus emptied itself within the peritoneal cavity. What to do was the important question. We had received absolute proof of the activity of the fluid now free in the peritoneum by its ready digestion of

Digitized by Google

starch. What would be the effect upon the peritoneal lining; would it disentegrate and partly digest it? The results of experiments as stated by different authors were conflicting, and besides, was not the patient even now affected as shown by the unmistakable signs of peritonitis. Without interference, there was every reason to believe that a fatal termination could be reasonably expected; and, if patient should be fortunate enough, as to ultimately escape with his life, in what condition would the contents of the abdomen come out—would not some of the organs be permanently crippled by adhesions and malpositions? Such were the important questions clamoring for a prompt answer. A hasty consultation was called, and it was decided at once to interfere; not at this time to cure the cyst, but mainly to save life from the destructive peritonitis that was already fairly under way. Preparations for immediate operation were hastily made, and by smoky lamp light, in a small unhandy room, and in the midst of unfavorable surroundings the operation was begun—unfavorable in all respects except that we were reasonably sure that the abdomen and immediate surroundings were fairly free from sepsis.

On opening the abdomen not a trace of cyst wall could be discovered as we had surmised, and, after carefully draining the peritoneum of its fluid and flushing abdomen with large quantities of hot sterilized saline solution the abdominal wall was closed and healed by first intention. Nothing eventful save the wounding of the stomach—which wound was immediately closed by suture and as a means of further protection a patch of omentum was added—and except for vomiting of blood once or twice the next day recovery was uninterrupted. It was hoped that the cyst wall at the site of rupture had become sufficiently irritated to cause adhesive inflamation and thereby close the rupture. In this expectation we were not disappointed for just three weeks after the first operation the cyst made its reappearance at the original site. It was proposed to make an attempt to cure the cyst. Accordingly the boy was again anaesthetized, the incision made in the same place as before, and the abdomen opened. A great deal

Digitized by Google

of thickening of the omentum was found with adhesion to the abdominal wall at plaee of first incision. No attempt was made to loosen the gastro colic omentum, but an incision through it down to the cyst wall was made. Cyst wall was secured in the usual way—pulling it well into the wound, introducing a canula emptying the cyst in this manner, and sewing it to the edges of the abdominal incision. A large double soft rubber drainage tube was introduced to the bottom of the cavity and the rest of the wound closed as usually. The quantity of fluid escaping during the first few days was enormous, soaking the large thick dressings in a short time and requiring their frequent renewal. The skin coming in contact with the moistened dressings became exceedingly red and excoriated and it proved a difficult matter to protect it from the irritating action of the pancreatic fluid. After some trials I found that mutton tallow applied to the skin when still quite warm gave better protection than lard, vaseline and the rest of the softer ointments. One of the drainage tubes was removed after five days, the second one was gradually shortened till at the end of three weeks it was removed entirely. Six weeks after the last operation the fistulous tract had completely closed, and boy was discharged—cured. His health and nutrition had rapidly improved, and when discharged he appeared as well as ever.

The facts to which I wish to call special attention in this case are: 1. The typical history of the case agreeing in all the important points with the classical symptoms of pancreatic cyst after injury, as described by Senn and others, with this exception, that all the cases reported so far as I can learn were met with in adults—mine in a child.

2. The danger of exploratory puncture even with a small hypodermic needle—this is beautifully illustrated in the case presented, and though so careful a surgeon as Senn advises this little procedure in case of doubtful diagnosis, and strongly condemns it in case of hydatid, distension of the gall bladder, etc. I am persuaded that in cyst of the pancreas when of rapid development, and where the cyst wall is normally thin and delicate, this little operation cannot be too

Digitized by Google

strongly condemned. A few years ago so able and conservative a surgeon as Treves recommended the exploring needle in cases of doubt in appendicitis. My first case of appendicitis proved to me the absolute danger of such a method, that I have always regarded this procedure as by no means void of danger. From the experience I have had in the above case of pancreatic cyst, I am more than ever convinced that the exploring needle and hypodermic syringe should be banished as means of diagnosis in any obscure abdominal affection. The dangers are so overwhelmingly against their employment as compared with the aid they may render, that exploratory puncture of the abdomen must henceforth be ignored.

Digitized by Google

DISCUSSION.

DR. GRAVES, Grand Rapids: This paper surely should be discussed, and though I have the misfortune to hail from Grand Rapids, I feel I must say something.

THE CHAIRMAN: This is Friday, you know, and the distinguished gentlemen from your city that may feel impelled to speak, will be allowed the floor at all times during this day.

DR. GRAVES: Whenever I see that Dr. Van der Laan is going to read a paper I want to be present. I know it is going to be interesting and instructive. It was my pleasure to know the doctor for many years, being acquainted with him at the University, and I know wherof I affirm. What I do not know about pancreatic cysts would fill a very large library. I guess, perhaps, I share the sentiment of many who are here to-day. On this account, if for no other, I have been very much interested and pleased with the paper.

These Muskegon fellows have a knack of getting hard and rare conditions. I understand that Dr. Van der Laan and Dr. Garber cut out a man's heart the other day and the patient recovered—it was an abscess of the pericardium.

The doctor is to be congratulated on the outcome of the case which he cites in his paper. The symptoms were very alarming when the rupture occurred.

What the doctor said about the hypodermic needle is very true. In abdominal surgery it is a dangerous thing to use, very dangerous; pushing things along into the dark is not scientific when something else can be done.

There is one little feature in connection with this paper which I would like to dwell upon. It was not mentioned by the doctor, though I believe he doubtless has seen reference to it. It is a new method or new means of assisting us in the diagnostication of intra-abdominal tumor, and I think it is

Digitized by Google

very valuable. While it is not cock-sure it certainly helps us in the diagnosis of intra-abdominal tumors. I refer to the distension of the colon with air. The rectum is entered by a tube with a bicycle pump attached, and the colon thus distended. By this means many obscure conditions are rendered so clear as to narrow the diagnosis at least, and must help us in elucidating the mystery. In cases where the tumor is large and central, and we have no particular history, the colon will often be found, on palpitation, to be above the tumor. In such case as the doctor refers to of pancreatic cyst, the colon would be below the tumor. This does not entirely clear away the element of uncertainty in diagnosis; but it certainly is valuable and it must assist us in clearing it up.

THE CHAIRMAN: The Chair can hardly let a paper of this kind go by without saying a word or two. The subject of the hypodermic syringe as a means of diagnosis should be thoroughly gone into and discussed. I think that there are only two or three places where the hypodermic syringe ought to be used and one place is in the brain tissue. When we want to explore the brain we can do it freely, plunging the needle into the tissue almost any place, except around, and at the base of the brain. The hypodermic syringe may be used with profit and safety.

I would like to differ with the doctor in his procedures in secondary operations. I do not think it is good practice to make a second operation over the site of the first one. I think after I have had one whack at the poor tissue that is enough. Get a new field; it would be as well or better than to confine it to the site of the old cicatrix.

The paper certainly is interesting. I can see only one other point that the doctor neglected to touch upon, a means of diagnosis, and that is palpitation. I think, maybe, the doctor could have dwelt upon that just a little bit longer.

DR. GRAVES: I want to go on record as saying that the danger associated with a hypodermic is practically limited to the abdominal cavity; outside of that I do not think there is much danger in its use.

Digitized by Google

DR. STOCKWELL, Port Huron: Dr. Graves says that Senn is on record as opposed to the use of the hypodermic needle for exploratory purposes. I want to put myself on record as Dr. Graves has. I am quite certain that I hastened a death by using a needle for exploratory purposes, so I think the non-use of it for that purpose ought to be made quite emphatic.

Digitized by Google

SUTURAL CLOSING OF VISCERAL WOUNDS.

FRANK B. WALKER, M. D.,
Detroit.

Accurate approximation of serous surfaces is of supreme importance in attempted closing of visceral wounds. Whether offending gall-stones be brilliantly removed or an encroaching pyloric growth be boldly attacked, a sphacelated mass of strangulated gut be resected or a torturing calculus be extracted, ultimate success will depend upon the permanent control of visceral contents. Provided this result be attained and peritoneal infection thereby avoided, it matters little whether this or that technique be employed. The essential element of success in visceral surgery is the permanent protection of the injured and vulnerable peritoneum.

To accomplish this many procedures have been suggested, some adopted with more or less success, and others relegated, after triál and disappointment, to execration and oblivion. Pioneer surgeons may be said to have rarely, if ever, attempted complete closing of visceral wounds. Such as were met with, either as the results of accidents or in the natural courses of diseases, were usually allowed or caused to form fistulous openings upon the surface. The permanent obliteration of such openings and the successful closing of viscera, intentionally opened, are incidents of modern surgical progress.

Without discussing the relative merits of Senn's bone plates, Murphy's buttons, Bailey's tubes, Robson's bobbins and the many methods of intestinal suture, I shall simply describe two methods of sutural closing of visceral wounds, which a not inconsiderable amount of experimental and

Digitized by Google

clinical experience has taught me to be both simple and reliable.

The first method which I shall mention is the purse string suture, first recommended by Dawburn for the closure of bullet wounds of the stomach and bowel. This method consists in encircling the wound with a series of continuous sutures, each of which transfix the serous and muscular coats but do not pierce the mucous coat; the first hitch of a reef knot is then loosely made with the free ends of the suture, the encircled tissues inverted by a pair of dissecting forceps in the hands of an assistant, and the knot completed. When nicely done the wound will be found to have been accurately closed and every vestige of sub-peritoneal tissues concealed. This procedure is very easily and quickly executed and may be extended to operations upon the gall and urinary bladders as well as to small incisions in the stomach and bowel voluntarily made. Its utility in resections and amputations of the vermiform appendix is unquestionable. It has nevertheless its limitations. It is adapted to wounds not more than one-half inch in diameter and preferably to thin walled viscera.

The other method to which I refer is the Czerny-Lembert suture, which, in the closing of visceral wounds more than one-half inch in length or diameter, and in effecting either an end to end or a lateral anastomosis, has no superior. For the closing of simple wounds of any of the hollow viscera the continuous suture is a speedier means than the interrupted form. It is advisable however, in order to avoid undue distorting of the organ and unnecessary constricting of its lumen, to make use of both kinds. Separate threads should be used for at least two linear inches of such a wound.

To encircle a hollow viscus, as in effecting an anastomosis, at least four separate threads should be employed. These may make a happy combination of interrupted and continuous sutures if used in the following manner: Supposing an entero-anastomosis is to be effected, let four Lembert sutures be formed by four separate threads, one inserted into both portions of gut at the mesenteric junction, a second into the

Digitized by Google

walls opposite to the mesentery, the other two into the lateral walls respectively at points equi-distant from the first two. Let the knots be so tied as to leave a long and a shorter end on each thread. The quadrants thus formed may then be approximated, one after the other, by continuous sutures, using for this purpose the long ends of thread, which are finally tied to the shorter ends respectively next adjacent. A wound of the character proposed, having been encircled in the manner described, by two tiers of Lembert sutures of sterile catgut introduced by small smooth needles, will have been found to have been accurately closed, and, barring complications, to be subject to a favorable prognosis.

In assuming the employment of the sutural method and the use of catgut material, a discussion of the several devices offered for these purposes has been intentionally avoided. The advantages of absorbable sutures over any and all other devices are or should be, it seems to me, so patent as to need no apologetic evidence. Experience moreover affords the most reliable basis for correct judgment.

Digitized by Google

DISCUSSION.

DR. ROBBINS, Detroit: I have very little to say upon this paper, which I came particularly to hear this morning, and I am very glad that I had the opportunity to hear it; not that the paper was so extensive, but that it was so much to the point. The most important thing, it seems to me, of the suggestions the doctor made, was this latter one of suturing the openings in quadrants, using both forms of the interrupted and continuous suture. It seems to me this is the valuable point.

I am also interested to see how surgeons are more and more coming to stand upon the platform of the advisability of suturing intestinal and abdominal wounds rather than using foreign bodies to aid them in such work. Evidently, as we become more expert in doing that class of work, the more readily can the operations be made, and thus the less need for devices of any sort.

THE CHAIRMAN: I would like to hear from Dr. Best, of Grand Rapids.

DR. BEST, Grand Rapids: This is out of my department of work. Grand Rapids is so well supplied with expert surgeons, that such operations as these we trust in the hands of our worthy and well qualified gentlemen.

DR. GRAVES, Grand Rapids: I just want to speak about the remark the doctor made concerning catgut as suture material; I cannot agree with him; I do not believe I ever will agree with him in the statement.

Absorbable material is notoriously difficult to render aseptic; I know it, I know what I am talking about. I know that silk, on the other hand, is very easily rendered aseptic; I never had any difficulty with silk in intestinal surgery. I do not know of any one who has had trouble with fine silk in

Digitized by Google

suturing visceral wounds; I cannot trust catgut. Even with the latest form of fine kangaroo tendons which is supposed to be aseptic material prepared after the formula of Dr. Longyear, sent out in aseptic bottles, I have had abscesses form subsequent to operations for the radical cure of hernia after three weeks of absolute asepsis. Three or four weeks afterwards pus formed.

Digitized by Google

WHY SOME SEVERE CASES OF APPENDICITIS RECOVER WITHOUT OPERATION.

J. H. CARSTENS, M. D.,
Detroit.

All of us have seen severe cases of appendicitis unexpectedly recover. If in such a case a surgeon had been called who advised an operation, he will be laughed at forever by the patient, and such a case will always be pointed at to show that severe cases will get well with any kind of treatment, or even without any treatment in some cases.

Those of us who advocate usually a prompt operation are perfectly helpless if such a case is pointed out to us. We cannot deny that it occurred, that the operation was urged but that the patient would not submit. All we can say is, that it is a very rare occurrence. Formerly I explained it by showing that the appendix would become attached along the side of the cecum or the intestine, some times even to the sigmoid flexture and thus rupture into the bowel and heal without much trouble.

During the last year, I came across several interesting cases where there were peculiarities of the anatomical relation of the appendix, which explain how severe cases can easily rupture into the cecum and recover promptly and permanently.

In fact, the whole question of appendicitis has always seemed to me to be purely one of anatomy. As I have shown in an article a few years ago, and published in the "New York Medical Journal," you will find in all cases where there is inflammation of the appendix, that there is a stricture, (or several). Generally it is at the junction with the

Digitized by Google

Digitized by Google

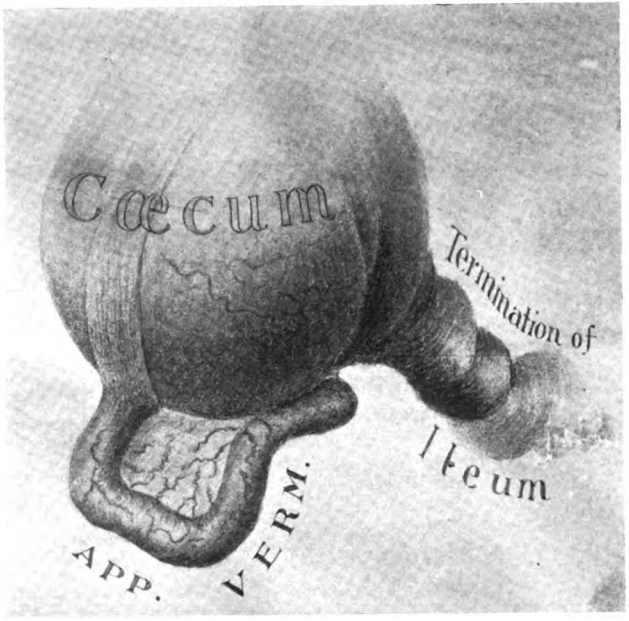


FIG. 1.

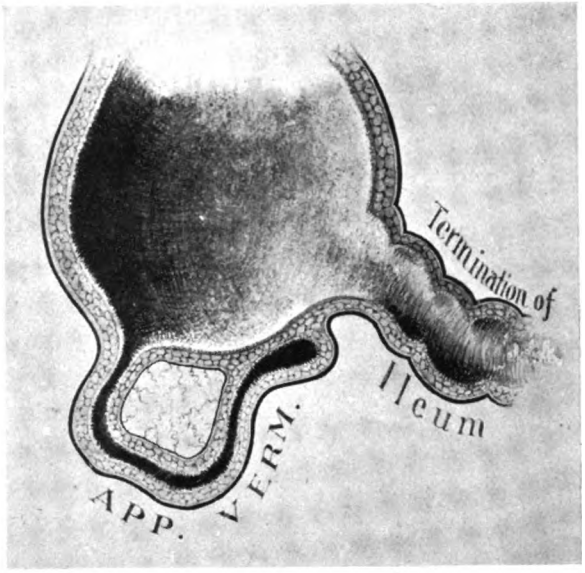


FIG 2.

Digitized by Google

cecum. Sometimes the valve is closed, at others the mucus membrane is swollen to more or less close up the opening. In all my experience I have only seen one appendix, attacked with inflammation, where the canal was of the same size or where the opening in the cecum was larger than the rest of the appendix. In other words, when the appendix has such shape that anything can get into it easily and also get out easily, there is no danger of appendicitis, *as appendicitis is brought about by the inability of the appendix to empty itself* whether the contents be a little fecal matter, septic mucus or a foreign body. This, it seems to me, is the plain, simple and whole etiological factor. I will admit that the appendix is more liable to inflammation than other parts, on account of its poor blood supply. There is a greater tendency to it, but the poor blood supply is never an exciting factor.

During my last year's experience, I came across two peculiar cases. They were well marked and characteristic of the ease with which severe cases might recover, so I thought a few words on this subject might be interesting.

The first case was that of Mr. I. B. who had had three mild attacks, the last being so severe, that he was finally frightened into submitting to an operation, in the interval. He was operated on May 27, '98, in the usual manner. Opening the abdomen and bringing the cecum into view, the appendix was found in this peculiar position, as indicated by this drawing. Fig. 1 shows the external appearance. Fig. 2 a cross section of the condition. You will notice that the point of the appendix for the extent of fully an inch was adherent to the cecum, *beneath* the peritoneum. There was absolutely no peritoneum between the appendix and the cecum. Hence it can be easily seen that in this case if the inflammation would take place at the distal end (which it naturally would) how it would fill with pus and finally rupture into the cecum, simply going in the direction of the *least resistance.* Muscle is a soft tissue; it easily breaks down; it offers less resistance than the peritoneum, which is a firm, strong, and a fibrous body and requires a good deal of force to break. Not only that it breaks less easily than muscle,

Digitized by Google

but the amount of plastic lymph which would be thrown out by the peritoneum itself when irritated, would strengthen it still more and tend to cause rupture *into the bowel* instead of into the abdominal cavity.

The other case, that of Miss M. C., operated on May 7, with two attacks, is identical except there was no loop as in the first case. The appendix was lying along the cecum, over the whole extent and had absolutely no mesentery whatever. It was about 2½ inches long, lying between the muscular coat and the peritoneum of the cecum. Fig. 3. The peritoneum had to be split up to the whole extent (2½ inches) shoved back a little on each side, so that the appendix without any peritoneal covering, could be easily enucleated and removed; then the two flaps of the peritoneum could be brought together over the bed where the appendix had been. In order to strengthen it, another row of Lembert sutures were used. Fig. 4 shows a cross section.

These two cases explain how a case of appendicitis with the most acute symptoms, fever, sepsis, etc., can suddenly break and all the symptoms subside in a very few hours, without there being any outward manifestations. There may not be any diarrhea and the little pus passed into the cecum would become mixed with fecal matter and not be observed at all, and we wonder how it is possible that the patient can recover.

In such a case we are guyed by our conservative friends and told not to be too hasty with the knife.

This is the single point I want to make in my paper, but it might be interesting to say a few words about the technic of operations. In interval cases, clean aseptic, the usual incision is made. The location of this incision differs; a number have been advocated but all have their good points; I prefer the outer edge of the rectus or the blunt separation of the oblique muscles without cutting them. In acute cases, we cannot pay so much attention to the line of incision, often better get near the crest of the illium. When the abdomen is opened and the appendix loosened from its adhesions, tie the meso-colon with one or two ligatures, according to its

Digitized by Google

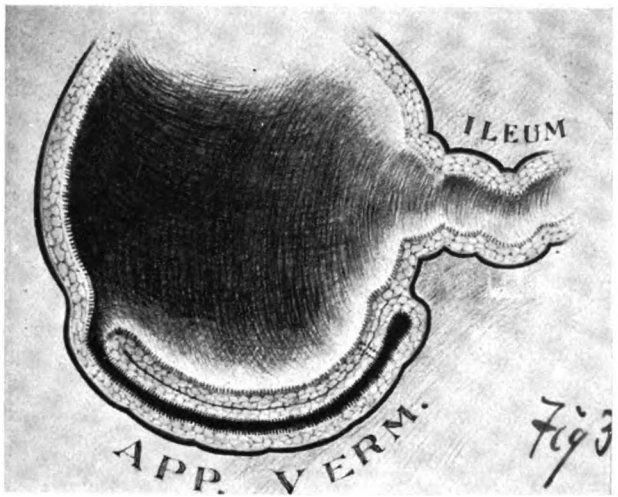


FIG. 3.

FIG. 4.

Digitized by Google

Digitized by Google

size and loosen your appendix so that you have the appendix *entirely free* from its attachment. Cut through the peritoneum all around and strip it back, then hold the denuded appendix with a pair of forceps, or as I prefer with the fingers, close to the cecum and cut it off. You must hold it tight as there is a great tendency to retraction and if you let it slip out of your fingers, the contents of the bowel might contaminate the cavity. With fine catgut sew the muscular coats of the appendix together, three or four stitches will do it. Carefully wipe the end for fear that a little contamination might have taken place. Cover the stump with peritoneum and for fear that that is not enough, depress this part and cover it once more with a row of Lembert sutures. You now have a firm, smooth surface. There is no danger of rupture of the bowel, and if there is an abscess in the stump, it will break into the cecum as I have shown before and not into the abdominal cavity. The abdominal incision is sewn up in the usual manner in layers with catgut.

In the pus cases, some times the appendix is entirely sloughed and hence cannot be removed. Some cases you can treat as you do interval cases, but as a general rule, in suppuration cases, simple ligation of the appendix near the cecum is enough. You have the abscess cavity anyway, you need drainage, you save time, and your patient gets along just as well. In these cases you need gauze or rubber tube drainage, sometimes both, and the abdominal incision should be closed with the figure of eight silk worm suture, but leave a large enough opening. I would rather have an abdominal hernia than a dead patient from lack of drainage. Some times I have had to take out one or two stitches afterwards, not having left a large enough opening.

From January 1 to December 31, 1898, I have had 33 operations for appendicitis. That is strict cases. Those where the appendix was removed in conjunction with the tubes or ovaries, or uterus, or for any other reason, are not included in this list. The list is as follows:

Digitized by Google

No.	Date.	Age.	Remarks.	Results.
1.	Jan. 15, J. H.,	56.	Appendicular Colic,	Recovered.
2.	Jan. 29, S. R.,	28.	" "	"
3.	Jan. 27, C. K.,	41.	Pus, 103.3° Temp.,	"
4.	Mar. 4, Susan R.,	30.	Pus, 102.0°, 2 Att.,	"
5.	Mar. 18, S. H.,	40.	12 Attacks or more,	"
6.	Apr. 2, P. C.,	23.	Appendicular Colic,	"
7.	May 7, Maude C.,	32.	App., 2 Attacks,	"
8.	May 11, M. K.,	35.	6 Attacks,	"
9.	May 17, J. E.,	43.	Pus, 103.0° Temp.,	"
10.	May 21, L. C. A.;	19.	3 Attacks,	"
11.	May 27, J. B.,	27.	Pus,	"
12.	June 4, C. H.,	25.	Pus,	"
13.	July 2, Mrs. S.,	31.	2 Attacks,	Died.
14.	July 12, Mabel R.,	20.	2 Attacks,	Recovered.
15.	July 17, F. B.,	32.	Pus, 2 Attacks,	"
16.	July 18, J. M.,	20.	Pus, 2 Attacks,	"
17.	July 25, Mary S.,	16.	Appendicular Colic,	"
18.	Aug. 5, Mildred H.,	23.	4 Attacks,	"
19.	Aug. 10, J. W.,	37.	3 Attacks,	"
20.	Aug. 24, E. P. S.,	44.	3 Attacks,	"
21.	Sep. 1, Bella P.,	10.	3 Attacks,	"
22.	Sep. 5, H. B.,	6.	2 Appendicular Colic,	"
23.	Sep. 14, Mrs. P. J. H.,	29.	Pus, 1st Attack,	"
24.	Sep. 24, T. B.,	24.	2 Attacks,	"
25.	Sep. 28, Mrs. J. H.,	46.	Pus, 103.0° Temp.,	"
26.	Oct. 15, G. C.,	17.	Pus, 2 Attacks,	"
27.	Nov. 1, Villeta C.,	22.	Appendicular Colic,	"
28.	Nov. 3, Mrs. T.,	23.	3 Att'ks, Preg. 4 mos.	"
29.	Nov. 11, H. N.,	35.	Pus,	"
30.	Nov. 21, Kate U.,	30.	App., 3 Attacks,	"
31.	Nov. 29, Mrs. T. A. J.	35.	Appendicular Colic,	Died.
32.	Dec. 3, Mrs. D. D. I.,	30.	Pus,	Recovered.
33.	Dec. 26, F. S.,	24.	Pus,	"

Thirty-three cases, two deaths. Thirteen cases between attacks; seven cases of appendicular colic; thirteen cases during attacks with rupture, and a high temperature, with pus and more or less general peritonitis.

Digitized by Google

DISCUSSION.

DR. CARSTENS, Detroit: (During the reading of the paper the author made the following comments:)

If you operate on a case like that with fine silk and that case is aseptic, you close up your wound and your patient is all right; he will not have any fistula and there is no trouble at all. If by any combination of circumstances, which is very liable to occur, your silk becomes contaminated, you have a fistula formed; your silk will be in there for years and years. I see and hear that some use silk, and they use it because they cannot clean catgut. I have looked at it entirely different. I have used kangaroo tendons, and I have used them for quite a while; but then I would get a lot that was septic. Before I knew the kangaroo tendon was not all right I had trouble, and then I prepared it myself, and I think I had better success and it was less septic. I found other things when I used kangaroo tendons; I found the patient would be well if I would sew up the abdominal incision in layers; the patient would be well and go home, and in two or three months afterwards I would hear from the family physician that the patient had some trouble, that there was something going on, and finally there was an abscess formed. Some of these patients I had under my own observation in Detroit where I could see them myself, and I watched those cases, and when I opened those abscesses I found out they were what you call steril abscesses, cold abscesses, as far as we could find out. Some were septic. Whether the contamination took place at the time of the operation or whether it took place afterwards through the blood is another question. What do they come from? They come from the dry animal matter that is in there. Kangaroo tendon is strong and tough. I tried catgut which is chromasized, it is powerful;

Digitized by Google

gentlemen have started off with the idea that the tendency should be to have a ligature that would hold long and hold the tissues in apposition, but finally I saw the trouble was the ligatures remained in *too long*, and that the chromatization of the catgut or kangaroo would harden it and that it would lie dormant in the system for weeks for which there was no need at all. My constant effort was to get catgut and kangaroo tendons and other things that would absorb quickly, and I have tried all these different methods, and I finally tried the method of Boerckman to sterilize catgut dry without a particle of chromatization, and found it is good, but it does not last three weeks, it lasts three or four days. *That is all that I want.* Any kind of a tissue in fifteen to eighteen days is just as strong as it ever was before or ever will be, and if it is not strong in fifteen to eighteen days it will not get any stronger afterwards; and there is no need of having ligatures that will hold four, six or eight weeks, whether it is an operation for hernia or anything else. What I want is one that will stop hemorrhage for forty-eight hours; you don't need it any longer. So I get catgut. I prepare it myself by simply putting it in ether, get all the fat out, get the catgut and wrap it up in packages of five, in tissue paper, and the tissue paper I put in an envelope, and I prepare a couple of dozen, and then I put that in a receptacle with a thermometer in it and I subject that to 300 degrees dry heat for three hours, and it will kill all the little cusses, and for fear some of them have escaped and that some of them have perhaps some little spore sticking around somewhere, I leave them quietly in the sterilizer for twenty-four hours and give them a chance to germinate, and then I give them another dose, and I guarantee you they are killed. You take a No. 3 catgut without any chromatization or anything and you will be astonished how strong it is. I do not have a half dozen assistants clawing over my ligatures, and nurses and everybody else clawing them over, I take them and put them in alcohol and I handle them myself, after my hands are clean, and nobody touches them but myself. I am liable to contaminate them, once in a while I do, but if I have a half dozen persons

Digitized by Google

handling them,—this one threading the needle and the other one does that—you are sure to contaminate them before you get them into the wound. I thought you would be interested in this, and for the benefit of Dr. Graves I would like to have you try it. For the general practitioner, for the man in the country who has got to do these operations in an emergency, Dr. Graves is right; don't use catgut, don't use kangaroo tendon and all those things. You have not the facilities, you will have trouble. My idea is you had better have a live patient with a fistula.

THE CHAIRMAN: The Chair may say that Dr. Carstens is either behind or else he is too fast. When I called for his paper an hour ago he was not here, and now before the paper is read he has it all discussed. The Chair, however, will entertain any remarks upon Dr. Carstens' paper.

DR. GRAVES, Grand Rapids: Silk is animal tissue, silk will absorb, Dr. Carstens to the contrary notwithstanding. Silk under some circumstances will absorb, not under all circumstances. If silk is sterile and not too coarse, and remains sterile, it will often absorb, I know it will; I have seen it absorb. If it becomes septic it will never absorb; it will last until it is removed as Dr. Carstens says. On that account, whenever I have to deal with a pus-focus I never use it. I never use it in ligating a stump, I use kangaroo tendon, which, as he says, after a while breaks down and comes away, even after it is septic.

The doctor while wrong in many minor particulars, is a tolerably strong man in many respects, and I have listened with great pleasure and instruction to his paper; but I see that he does persist in error in the cutting of the nerve. I thought we taught him better at the meeting in Detroit last year, but I see he still persists in this error.

DR. MAASS, Detroit: The question, how severe cases of appendicitis may heal without operation, is an interesting one, and every fact that may throw some light upon it is worth being mentioned.

About four years ago I operated on a man for pulmonary abscess; the patient died and the post mortem showed that

Digitized by Google

the abscess involved not only the lung, but liver and kidney also, the cause being actinomycosis. This man had about three months previous to his death passed through a typical attack of appendicitis. There was fever, tenderness, and tumor, and the attending physician assured me that there could be no doubt in regard to diagnosis. This appendix was found to be entirely normal except very slight and limited adhesions; it was thin and its lumen perfectly permeable. Appendicitis therefore may heal without leaving any pathologic changes of importance. This may look rather strange and difficult to understand.

Appendicitis has been compared to angina, a disease which causes pain, high fever and rapid pulse, and finally disappears without suppuration, leaving an organ as normal as before. Another disease may also help us to understand the question: Erysipelas causes swelling of the skin, tenderness, high fever and rapid pulse; when it has passed off no one can see where it has been. May not a similar streptococcus infection possibly have existed in the case of appendicitis in my actinomycosis patient?

Other cases may heal completely and for good, and all in a different way. Also at a post mortem I found the following condition: entire absence of the appendix, normal colon, limestone of about the size of a dollar near the colon at the site of the appendix, and no trace where the opening of the appendix into the colon had been. How this perfect and solid restitution may have been brought about, the following observation may illustrate: at a third post mortem on opening the peritoneal cavity also absence of the appendix was noticed; the patient had died from multiple streptococcus abscesses of the liver. Except the absence of the appendix and a soft mass of adhesions, nothing could be discovered at the cœcum, but removing this I found behind the cœcum a pus pocket nearly as large as my hand, and from here an opening admitting easily a lead pencil into the cœcum. This latter was at the site of the appendix. I believe I am right in giving the following explanation: the appendix had become necrotic, around it a large abscess, which had communicated

Digitized by Google

through the mouth of the appendix with the cœcum. In the case mentioned most probably the same conditions have existed before. Why did in one of these cases a definite healing occur and not in the other? It may be due to a disproportion between the opening and the abscess. If the original pus producing surface is too large to have all its secretions rapidly drained off, a part of it remains and prevents healing.

An experienced physician, who was very conservative in regard to operations, has stated that according to his experience abscesses not larger than a hen's egg will almost invariably disappear without interference, and abscesses larger than this are operated upon. The abscess empties through the original mouth of the appendix after necrosis has removed the obstacle, or in the way as we see so well illustrated in Dr. Carstens' drawing.

Dr. Carstens states further in his paper that the point of incision has to be chosen according to circumstances. This point I can most vigorously endorse. Look at the case mentioned, with the pus pocket behind the cœcum; an incision made in front would have entered the general peritoneal cavity and from here the pus cavity, bringing both in direct communication with the pus in this locality; the incision is better made from behind.

Within the last few years I had two cases where everything pointed to the presence of pus, but everywhere in front of the abdomen full tympanitic sound was elicited on percussion. I made the incision behind and found the pus without difficulty, or danger of producing general peritonitis.

Dr. Carstens further recommends very highly the use of catgut, dry sterilized. His objections to silk are, that it forms so frequently sterile or septic abscesses, and finally has to be removed instead of becoming absorbed or encapsulated. This result may not be due exclusively to the material, but to the manner in which it is employed. If you draw a silk suture very tight, it will remain so as long as it exists, and the tissue involved naturally become necrotic, so you have a foreign body consisting not only of the silk, but also of all the tissues it surrounds, which may liquify and form the sterile

Digitized by Google

abscess. The same may happen with catgut, but not so easily, as catgut softens more rapidly and may admit early enough circulation in the strangulated tissue and so necrosis may be prevented. Further, if you have a slight infection with either catgut or silk, it may be rendered harmless if the tissues are not too much deteriorated in their vitality by too closely drawn sutures.

These remarks are not theoretical reasoning, but they relate facts proven by experiment. The name of the author, time and place of publication I have forgotton. Since reading them I have taken special care never to tie too closely catgut as well as silk sutures, and believe have had less trouble with buried sutures and superficial stitch abscesses.

DR. C. VAN ZWALUWENBURG, Kalamazoo: One remark in regard to the cause of appendicitis. I think Dr. Carstens is perfectly right. If you have a free exit to the appendix, you will never have appendicitis. I have said a man is born with appendicitis, he is born with a predisposition to it. If the appendix is perfectly formed and perfectly smooth with a large opening into the cecum, you will never have appendicitis. I have been impressed with this fact by being called upon to operate more than once in the same family. I know of four different families in this little town of Kalamazoo where more than one operation was performed in each family for appendicitis, and usually the same form of appendicitis would occur in the same family.

In regard to the opening of abscesses into the bowel, I think it is the ordinary method in spontaneous cure of appendicitis, and I think that occurs more easily and more readily than we sometimes imagine. I am inclined to think that some appendicital abscesses that are well down and that are well back among the intestines in the abdominal cavity and difficult to reach, after the fifth or sixth day, are very much better left alone than operated upon because of the difficulty of getting at it, and because of the natural tendency for these abscesses to rupture into the cecum or some other intestinal tract, some other part of the intestinal tract in the immediate vicinity.

Digitized by Google

DR. BELKNAP, Niles: Physicians are obliged to avail themselves of some method by which the catgut and other ligature material may be kept always sterile, and may be kept constantly pliable. My experience has been, with the method of Dr. Carstens, that it makes the catgut a little stiff, and for quite a number of years I have used a solution of oil of Juniper, made from the berries, about one part in combination with alcohol two parts. This I think keeps the catgut constantly sterile and it keeps it from becoming tough, and I do not know that I have ever had an infection where the catgut was properly prepared before being put into this solution.

In regard to the theories of Dr. Carstens as to a recovery from appendicitis, I can hardly set myself up as authority against a man whose ability I class as highly as I do Dr. Carstens. However, I think the doctor is a little dogmatic in asserting or giving us to understand that these are practically the only cases of appendicitis which recover. It does not seem to me that cases of recurring appendicitis are accounted for on this basis, but it seems to me that a great many cases of appendicitis give rise to very grave symptoms and not ever rupture through into the peritoneal cavity but go through the natural opening finally of the appendix. This is mere theory, but the class of cases we call "recurring appendicitis" seem to me could certainly not be classed under this same head. I remember very distinctly having had one case of recurring appendicitis, where the attacks came on once in two months, and this man was cured by rectifying his diet. He has not had an attack for some three or four years.

THE CHAIRMAN: I might say that I knew Dr. Carstens could not read a paper without getting an operation into it some place, and I think as Dr. Belknap says, we have cases that are congenital, but I think it is due to the uric acid diathesis. The last speaker, (Dr. Belknap), says he has a patient who every two months has a case of appendicitis and that proper diet relieves it. I think if he will prescribe some of the salicylates that he will get good results. I thought maybe Dr. Carstens would bring the anti-uric acid treatment up. A great many of these cases get well. Diet these

Digitized by Google

patients, it does no harm, and it is good treatment. Get the intestinal tract in a good condition, and if you have to operate, you can operate, that is certain. I think we do not pay enough attention to the anatomical structure of the appendix, and especially the base of it. Here we have adenoid tissue, all going to show that there is a predisposition that will bring about just the condition we do have, suppuration, etc.

I think the doctor in reading his paper misread one portion of it in which he said that he sutured up the stump after stripping back the peritoneal coat and then wiped it off. I have myself seen him after he stripped the coat back, wipe it off first so as not to get any of the contents of the bowel in the abdominal cavity and then suture it, and if he wanted to wipe it off, wipe it off again; I think that is what he meant.

DR CARSTENS: If you will look at the title of the paper I think it will explain some of the points. It says, "Why *some* severe cases of appendicitis recover without operation."

I want to bring out this little anatomical point, and outside of that I have very little to add. Dr. Graves here is entirely mistaken if he thinks I am a stickler for any one particular incision. I stated so last year and this year. You have got to gauge your case and cut down just where you want to. I cut up a great deal higher where I never touch that nerve. If I can avoid nerves I do; I don't cut them for the fun of it, but if I have got to cut them I don't care a picayune. I would rather have a man well with a little paralysis of some of the abdominal muscles than to have a dead man. Now, I often cut as near as I can at the outer edge of the ructus. I can show you by the anatomical plates (illustrating) there is a place where there are no muscles, where there is just fibrous tissue, and if you make your incision accurately you will have very little hemorrhage and you can nicely adjust those parts. I shall bring that point out some other time. I have got a man—no I haven't either, he has just gone home—but I had a man whom I cut into at the outer edge of the rectus. He had several attacks of appendicitis, and he had a firm lump, and I cut about an inch further out, about an inch from the crest of the ilium; I cut through there, separating the muscles,

Digitized by Google

opening the peritoneal cavity just a little and got in my finger, I felt this hard firm lump; I found the cecum was firmly attached to the side of the pelvic bone, and thought I could separate it easily, but I could not. It was very firm, and what did I do? I sewed up the peritoneum, absolutely closed it, and shoved the skin over, dropped back here, and cut down outside, (illustrates by a chart), right near the bone, close to the ilium, cut down on this hard substance and finally I fished out a pin with a large amount of lime around it. This had nailed the appendix—not to the cross, but to the side of the pelvis, and nailed it down there, and there it had been all this time. I adapt myself to the conditions, I do not always succeed, but I try my best not to be a stickler for any kind of procedure.

Dr. Maass has so beautifully explained this whole question that there is not much left for me to say.

On that other point, why I use catgut instead of silk: For instance, if you strike some little nerve fibre that patient will probably have some nervous symptoms, pain and epilepsy and all kinds of reflex symptoms, and you find this imprisoned nerve between the silk, and cases are on record where they have had to open the abdomen again and take the silk out that encircled that stump. If I use catgut that never happens, and if I accidently should tie one of the ureters with my catgut that will not hurt any, it may back up the urine a little into the kidney, and in forty-eight hours it is softened, the urine passes all right, and the kidney is all right. You can do almost anything with catgut.

Digitized by Google

A PRELIMINARY REPORT ON NON-SEPTIC POST OPERATIVE LEUCOCYTOSIS.

HERBERT MAXON KING, M. D.,
Grand Rapids.

It is generally admitted, I think, that leucocytosis is one of the most constant and characteristic phenomena observed in sepsis. The peculiar behavior of the colorless elements of the blood under septic conditions, arising either from wound infection or idiopathic pus formation, has been much studied within the past few years since the introduction of modern laboratory methods into clinical practice.

But while the diagnostic importance of *pronounced* leucocytosis is now recognized to real purpose by surgeons generally, the *milder* types, which so often present in operative cases where the history is vague and the indications not clearly mapped out by the symptoms, still lack that value which a systematic study of the blood in every surgical case entering the hospital would in a comparatively short time give to them.

Cabot, in his "Clinical Examinations of the Blood" (page 193) writes: "Of the value of the blood count in distinguishing septic from non-septic wounds and estimating the degree of sepsis, and the importance, or needlessness of operative interference, *not much is known.* The subject deserves to be carefully worked out from a surgical point of view."

I am not aware that much (if any) systematic work in this direction has been done as yet, although an occasional report of observations along this line reach us through the medical press.

It is obvious that before we can safely place a pathologic significance (speaking relatively, of course) upon a post-oper-

Digitized by Google

ative leucocytosis, we must be familiar not only with the normal blood conditions of the individual case, but with the degree of leucocytosis which a normal non-septic reparative process will produce. We should likewise familiarize ourselves with such other changes in the blood as appear sufficiently often in normal post-operative cases to fall within the category of natural phenomena of wound repair. With this knowledge of what may be termed the normal standard, any well marked, or sustained departure from it will have a diagnostic significance second to no other post-operative symptom with which the surgical ward is as yet familiar.

To make this standard of much value, much preliminary work by many observers will be necessary, but the technique of quantitative examination of the blood is so simple with the instruments at our command today, that every well equipped hospital in the country should be able to furnish at least a few reports every month, and by the compilation of such reports, we might possess in the course of two or three months after such concerted effort were instituted, all the information necessary to establish such a standard as would be of inestimable value to the surgeon.

The present report is based upon investigation along the lines here indicated. It is with some hesitation that I venture to present it before this Society since it is, in certain features, incomplete, but if it is borne in mind that it represents merely work which is preliminary to a fuller investigation of the subject—and in view of the interest which it seems to me the subject should excite, even in its present incompleteness, I think it may not be entirely without value.

The work was undertaken at the suggestion of Dr. Eugene Boise, at whose request, indeed, I have prepared this report. It embraces, as will be seen, a series of ten cases, all of which except one, are abdominal sections. The one exception is an amputation of the breast for malignant disease; one of the abdominal operations was also for malignant disease, and still another, for a papillomatous cyst, which in one sense, I believe, is classed as malignant, although not so histologically. Neither of the malignant cases presented evidence of cachexia,

Digitized by Google

which latter condition would of course, have destroyed their value for present purposes on account of the presence in such cases of leucocytosis. So far as could be determined, the general health in all ten cases was fairly good. There had been no history of recent suppuration, nor was any pus present in any of them at the time of operation. Nine cases were in adult women, one (the appendectomy) in a very vigorous young man. The operations as made, and the operator in each case, were as follows:

CASE 1. Abdominal section for Oophorectomy, Dr. Eugene Boise.

CASE 2. Abdominal section for Oophorectomy (malignant), Dr. Eugene Boise.

CASE 3. Abdominal section for Ventro-fixation, Dr. O. E. Herrick.

CASE 4. Abdominal section for Ventro-fixation, Dr. Richard R. Smith.

CASE 5. Abdominal section for Oophorectomy, Dr. Schuyler C. Graves.

CASE 6. Abdominal section for Oophorectomy, Dr. Schuyler C. Graves.

CASE 7. Abdominal section for Appendectomy, Dr. Schuyler C. Graves.

CASE 8. Amputation of Breast and removal of Axillary glands (malignant), Dr. Schuyler C. Graves.

CASE 9. Abdominal section for removal of Papillomatous cyst, Dr. O. E. Herrick.

CASE 10. Abdominal section for removal of Ovarian cyst, Dr. Schuyler C. Graves..

In the course of these investigations other cases were undertaken and recorded which cannot be incorporated in this report because of complications which arose prior, or subsequent to the operation, which vitiated the experiment. In all of the cases reported the wound repair was entirely normal, and of course, aseptic.

The method adopted was as follows:

1st. A complete quantitative examination of the blood, exclusive of a differential leucocyte count, was made from six

Digitized by Google

to twenty-four hours prior to operation. (In case 6, this examination was made three days prior to operation, the delay being occasioned by the appearance of menstruation; and a second leucocyte count was made seventeen hours prior to operation.)

2nd. A leucocyte count was made six hours after completion of operation.

3rd. A second complete quantitative examination similar to the first was made twenty-four to thirty hours after operation (except in the first two cases).

4th. A leucocyte count was made every twenty-four hours thereafter until all danger of sepsis was passed, and the leucocytes had fallen to practically a normal number. The same instruments were employed in all cases, (The Thoma-Zeiss haemo-cytometer and Von Fleishl's haemo-globinometer). My pipette for red corpuscles counts rather lower than it should, but as the same pipette was used constantly, and comparative observations are all that are necessary, the results meet the requirements.

In estimating "color index"—five million per cubic millimeter was taken as the normal 100 per cent. for red corpuscles; this is rather higher than normal for woman, but a single standard for all cases was considered advisable. Like conditions of nutrition were observed in all examinations, and by reason of the surgical nature of the cases, of course, digestion leucocytosis is always excluded from consideration.

The greatest possible care was always exercised in procuring the specimen, diluting and mixing the same and counting; but as absolute accuracy is unattainable with the Thoma-Zeiss apparatus, note was not made of anything under one hundred thousand per cubic millimeter, in counting the red cells, nor under one hundred in the colorless elements.

The blood in all cases was peripheral and obtained from the finger tip by puncture with a needle lancet sufficiently deep to allow of procuring the specimen without compression.

I have made a graphic chart of each of these series, from which may be observed the relation existing in each case between the leucocyte count, the pulse and the temperature.

Digitized by Google

These charts also give the hours at which observations were made and the results of the two complete quantitative examinations—as well as the nature of the operation, and name of operator. It will be seen on referring to these charts, that the leucocytosis bears no direct relationship to the temperature, or pulse, except in a general way, and at the very start. It will be observed that the maximum leucocytosis occurs in five, or one-half the cases, six hours after operation. In four cases, twenty-four hours after operation, and in only one case is it delayed until forty-eight hours after operation, and by the third or fourth day has fallen to within practically normal limits. The highest count observed was in Case 2—six hours after operation, when it rose to twenty-four thousand, falling to 13,400 within the twenty-four hours thereafter. The second highest count observed was in case 1—twenty-four hours after operation, when it reached 20,000, falling to 11,000 within nine hours thereafter.

Both these cases, it will be observed are oophorectomies—the former and higher of the two being one of the malignant cases. The third highest count occurred in Case 8—six hours after operation, 18,800, which was slightly more sustained than the other two, and occurred in the only other malignant case. It is interesting to note that only in one instance did the leucocyte count rise above twenty thousand, and in no instance was this degree of leucocytosis sustained for twenty-four hours. It is probable that it fell within six hours, but I have no observations to demonstrate such a fact.

In this series, only one case occurred which demonstrated the diagnostic value of the leucocyte count. This was Case 7, when following fifty hours after an operation for removal of the appendix, there occurred a distinct chill and rise in temperature, the patient became anxious, and the face drawn and jaundiced—symptoms which occasioned considerable anxiety on the part of the surgeon and attendant. The leucocytes numbered seven thousand however, and six hours thereafter, 7,200. The suspicious disturbance was no doubt occasioned by a post-anaesthesia congestion of the kidneys as the urine was highly albuminous at the time of the chill and for a day

Digitized by Google

or two thereafter. In this case the leucocyte count excluded sepsis.

One other of these cases requires special mention. It is Case 9. It will be observed that the leucocyte count before operation indicated a condition of leucopenia, being 3,800, and on the fourth day after operation it fell to 2,800. The maximum leucocytosis in this case occurred about thirty hours after operation, and amounted to 10,900, which was equivalent to 15,000 in one whose blood was normal in the beginning.

Beginning with Case 3, a second quantitative examination of the blood with reference to the red corpuscles and haemoglobin was made in eight cases of the series with results which are to me, at least, rather surprising, and of sufficient interest to warrant some detailed mention here.

These examinations, as already stated, were made in each case from six to twenty-four hours prior to operation, except in Case 6, when a longer time elapsed, and from twenty-four to thirty hours after operation. In none of the operations, unless in the amputation of the breast, was suffieient blood lost to account for any material variation in blood count, but if *any* variation were to be looked for, it would naturally be expected to show itself in diminution, which, however, was not the case, as will be seen.

In Case 3, the red corpuscles increase in the second examination more than 500 thousand over the count in the first examination, the haemoglobin remaining the same, and consequently lowering the "color index" somewhat.

In Case 4, the numerical increase in the second over the first examination is fourteen hundreed thonsand, while the haemoglobin advances from seventy per cent. to ninety per cent.

In Case 5, the cellular increase is one million—the haemoglobin 5 per cent.

In Case 6, the increase in this respect is insignificant, and in this connection it is interesting to note that this patient was a morphine habitua.

Digitized by Google

In Case 7, the increase numerically was 2,100,000, and in haemoglobin 5 per cent.

In Case 8, the increase was again insignificant, being only 100,000, while the haemoglobin remained unchanged.

In Case 9, the numerical advance was 300,000, the haemoglobin 5 per cent.

In Case 10, the cell increase was 500,000, that in haemoglobin 15 per cent.

I would not venture to draw conclusions from these meagre observations. It is more than possible that this change in blood value is more apparent than real, and obtains merely in the peripheral blood for a few hours, or days, after operation. On the other hand, it may have a more permanent character, and consequently a deeper significance.

Dr. Boise suggests that it may have some bearing on the frequently observed improvement which follows simple abdominal incisions in tubercular disease of the peritoneum and abdominal glands. In any event, I hope the subject will be more thoroughly studied, for it is certainly interesting.

In this connection, Dr. Boise called my attention a few days ago to an excerpt appearing in the "American Journal of Obstetrics" for April, from an article by Ermanno Pinzani, published in December, 1898, which I quote as follows:

"Following removal of ovaries, the number of red corpuscles is increased, and that of leucocytes diminished about 917,153 for the red, 1,919 for the white. The difference is too great to render errors in counting supposable, the corpuscular mass increases in volume as shown by the haemotokrit-haemoglobin is greatly increased, amount of water diminished."

It would be interesting to know if this observer is reporting a single case (whieh I infer) or averages, and it would also be interesting to know what instrument he uses to bring the count down to such fine figures.

It would be unwise to draw any broad conclusions from the above report. The number of cases composing the series is too small, and as before stated, these experiments are in-

Digitized by Google

complete in some important details, especially as regards observation on the red blood corpuscles and haemoglobin.

It is safe to say however, 1st, that an increase of from five to ten thousand leucocytes per cubic millimeter following operation in from six to thirty-six, or even forty-eight hours, is a normal post-operative condition, provided it be not sustained.

2nd. That probably the maximum leucocytosis in the majority of cases occurs within the first twelve hours after operation, and is very transient.

3rd. The leucocyte count in the normal reparative process bears no relation to the pulse or temperature.

4th. That a leucocytosis of ten thousand, or more, above the individual normal, sustained for more than a few hours, may be looked upon with suspicion, and

5th. That a normal leucocyte count may, with great safety, be taken as good evidence of the absence of septic complications, the most suggestive symptoms to the contrary, notwithstanding.

Finally, I again urge that no surgical hospital is well equipped whlch has not the necessary apparatus for making quantitative blood examinations, and no intern is compent, who is unable to satisfactorily perform the technique of this simple operation.

Digitized by Google

DISCUSSION.

DR. BOISE, Grand Rapids: I wish to say a word upon this subject. The doctor says the investigation was undertaken at my suggestion; it was done because of my desire and the general desire of surgeons, to ascertain any post-operative septic condition that may occur at as early a period as possible, and knowing as we do that sepsis and septic conditions are accompanied by leucocytosis, it occurred to me that possibly an early increase in the leucocytes might be a very valuable indication as to post-operative sepsis. Unfortunately for this experiment we have had very little trouble at Grand Rapids, but it occurs to me that in Detroit, or some other place, where they have post-operative sepsis, these observations might be very profitably carried out.

As to the increase of red corpuscles, it was very astonishing and we cast about for explanations which of course could not be given. The thought occurred to me whether the increase in the red corpuscles is not simply apparent and whether it is possible that the watery element of the blood is extracted by the tissues, leaving an apparent increase in the red corpuscles. That is simply a thought that occurred to me, whether it bears upon the question or not has not been proven, and cannot be without further observation. There is a great desire on my part that observations should be continued in order that we may have possibly an early means of recognizing septic conditions.

THE CHAIRMAN: Evidently Grand Rapids has passed through an epidemic of leucocytosis, or else she is expecting it.

DR. GRAVES, Grand Rapids: I want to mention two little points in connection with this paper, and the first is, if comfort can come to all operators such as came to me through the words of Dr. King, the value of his paper will become readily

Digitized by Google

apparent. Any appearance of sepsis after operation for appendicitis alarms us greatly. I remember the case of a beautiful boy who was taken with a chill, increase in pulse-rate and temperature, and tenderness over the liver. It was a very suspicious condition and we were all fearful that it was sepsis. I know that as soon as the nurse telephoned me that the boy was chilly I immediately telephoned Dr. King; I said to myself, 'I will put my trust in him.' I could not find him. I went to the hospital and fortunately he was there poring over some blood from this boy's finger. I said to him, 'Doctor, what is it, I want to know.' He said 'I predict that this boy will not die of sepsis.' He said, 'the leucocytosis is not pronounced.' The boy soon passed through this complication, which proved to be catarrhal cholangitis, and got well. It is unfortunate in one respect that this paper, although a strong one, has had its strength detracted from by an unfortunate circumstance. In a case of laparotomy for a fibroma symptoms supervened which denoted a septic condition; but the doctor was in a neighboring city doing some work and could not be obtained. Had he been able to make experiments in that case I think it would have been a very valuable addition to the paper.

Dr. Carstens, Detroit: This paper is a very valuable one, perhaps it is the most valuable one that has been read here, because it gives us new directions and new lines. If the points brought out by the doctor could be verified by others, and the problem worked out, it is certainly a very valuable one. It brings out points that we have been working at for a long time, to try and find the septic condition as early as possible so we can act accordingly, to show by leucocytes, or anything else, that there is sepsis going on. If we can ascertain that with certainty we certainly have gained a valuable point in our profession. I certainly hope the doctor will continue his observations. This whole question of phagocytosis and leucocytosis is so important that it never can be investigated too thoroughly and too minutely. As the doctor so well said, if a great many observers go to work at this, each one working out a little point, we are gradually getting a little

Digitized by Google

light; but patients do recover from septic conditions and we gradually see there is something going on in the system, there is something there that allows one patient to resist a most purulent septic condition while the other one with slight septic conditions goes under. There is some condition of the blood, some condition of the system, in one patient, which offers great resistance, and in the other very little. It has a connection not only with surgery but with typhoid fever and pneumonia, and that I think is a great problem today before the profession, the cause and how to strengthen the power of resistance to septic affections, and not what will cure appendicitis. I want to congratulate the doctor.

THE CHAIRMAN: Do you take the blood from the finger the second time ?

DR. KING, Grand Rapids: In reply to the question that was asked me I would say, always from the finger-tip, not necessarily the same finger of course, but it was all peripheral blood.

I would like to say further that the leucocytosis is entirely independent of the gastric disturbances which follow chloroform anasthesia, some of the most pronounced leucocytoses having occurred where the chloroform was beautifully borne without any gastric disturbances; whether chloroform will produce leucocytosis or not I do not know.

In reply to the other question, of course an inflammatory disease, I infer you mean a septic disease, do you not ?

DR. VAN DER LAAN: Yes, sir.

DR. KING: In any form of sepsis, whether it is from a felon or pelvic abscess, you get a great degree of leucocytes, unless it is such a profound sepsis as overwhelms the system and kills immediately, as occasionally happens in the rupture of the pus sac of a purulent appendix, where the infection is one of great virulence and the patient dies before a leucocytosis is established, before the body has waked up to the rescue, as it were.

Where there has been any suggestion of septicæmia or sapremia, there has been an increase of leucocytes, as far as my observation goes. Although some observers claim that

Digitized by Google

very mild septic defections may not be attended by leucocytosis.

DR. ROBBINS, Detroit: I move that a committee of three on nominations for officers of this Section be appointed, such committee to report at two o'clock this afternoon.

The Chair appointed as such committee, C. W. Hitchcock, Detroit; E. B. Babcock, Kalkaska; C. T. McClintock, Detroit.

Digitized by Google

DISEASES OF THE CAVITIES OF THE NOSE AN IMPORTANT FACTOR IN PRODUCING AFFECTIONS OF THE EYE.

ALBERT E. BULSON, M. D.,
Jackson.

Cases are presented to us daily, usually school children, who have but recently manifested some marked disturbance of vision, the symptoms of which are of course variable, but as a rule, headache, blurring, with a dry smarting sensation through the eyes, and an increased lachrymation, with blephrocon junctivites.

With few exceptions, these cases are presented to the oculist for the purpose of having the eyes tested and glasses adjusted. At this first examination, it is important for us to always bear in mind that all cases of headache, blurred vision and general ocular disturbance are not due to *refractive* error, and he who adjusts a glass *simply* as a *routine* of business will in a very short period of time find, in many of such cases, that the conditions he intended to relieve are not improved, but on the contrary, are made much worse, and perhaps the case goes out of his hands entirely, seeking relief from other sources.

It is not my purpose in this paper to enter into a full discussion on this important subject, nor to draw such precise lines in symptomatology as to overshadow the more important consideration in its practical bearing.

In systematizing the ocular symptoms dependent on pathological conditions of the nose, Gradle makes the following classification:

Digitized by Google

1st. Lachrymation without primary lesion of the tear passages of the eye and due to some chronic abnormality of the nasal passages.

2nd. Fullness of the lids and itching, possibly with increased lachrymation and more or less pain with asthenopia, especially marked in one eye. Patients with these symptoms aggravated, have also a refractive or muscular anomaly.

3rd. Periodical discomfort (itching of the lids) allied to hay fever or coexisting with conjunctivities, lesions are first of follicular enlargement and finally the formation of large, flat, yellowish granules, which disappear in cold weather.

4th. Photophobia with or without pain in the eyes, these being often blood-shot with little nasal annoyance, but decided itching.

5th. Injection of the pericorneal vessels, together with varying degrees of above symptoms chronic and persistent.

6th. Acute congestion of the lids, with irritable nose erysipeloid in character.

7th. Sudden œdema of the lids, without congestion lasting only a few hours.

For the purpose of the present paper, we will simply divide our subject into two classes.

1st. Pathological conditions of the eye resulting from the passage of morbific material from the nose through the nasal duct or immediate tissue of the eye.

2nd. Pathological conditions of the eye dependent on hypertrophies, deformities or mechanical abnormalities of the nose.

As is well known, the eye is directly connected with the nasal cavities by the nasal duct, which is lined throughout with the same mucous membrane which covers the globle of the eye and lining the lids, giving direct communication for the passage of the morbific germs from the nose to the eye. The nose then, under certain pathological conditions, becomes the nidus, for the aggravating causes of the ocular symptoms.

It will be seen at once that the ready means of the nasal duct, renders the eye liable to attack from nasal diseases,

Digitized by Google

particularly such as ozena, hydrorrhœa, gonorrhœa, diphtheria, syphilis and the various forms of rhinitis.

The eye symptoms occurring with this condition are lachrymation, photophobia, burning and smarting of the lids with deep injection, which may embrace the whole conjunctival mucous membrane of the eye. Germs frequently gain entrance to the eye by direct migration, but more frequently are forced into the eye by blowing the nose, sneezing and by the indiscriminate use of the stomizer.

The cul-de-sac around the inferior turbinate body is so situated that it serves for a receptacle and accumulation of effete material, which is already or will very soon become decomposed, and find its way into the lacyrymal sac and to the ocular conjunctive.

The irritating qualities of this morbific material immediately sets up a blennorrhœa, ulceration following, which will not yield to any form of treatment directed to the ocular trouble, until the immediate or exciting cause, the nasal affection, is removed. This particular form of nasal disease is more prevalent during the fall and spring months of the year.

The oculist's attention is particularly attracted by the number of school children ranging in age from five to fifteen years who present themselves at the office for treatment with nasal affections. Quite a per cent. of those have associated corneal ulceration or some form of phylctenular inflammation or lacrymal disease.

A large per cent. of the cases that we examine of this character we find great congestion of the turbinals, with copious watery discharges from the nose, the formation of crusts and excoriation of the upper lip. The eye symptoms which have become manifest are marked by excessive lacrymation, photophobia, and when the deep structures are involved (which is often the case when there is associated a specific constitutional dyrcrasia) we have marked pain. I wish to mention in this connection that it is frequently the case that the nasal diseases have not advanced to the aggravated stages above mentioned, and as a consequence, the eye symptoms are not so pronounced. The usual symptoms in

Digitized by Google

mild attacks are simple photophobia, blurring of the vision, increased lacrymation and a feeling of roughness of the lids, giving the sensation of sand in the eye.

Unless we are guarded in our examination of the case, and have in mind the frequency of the nasal affections as a cause of the eye trouble, we are liable to be misled in our diagnosis and make the grave mistake of adjusting glasses.

Many times, in the early years of practice as an oculist, I have made this error, and this experience has taught me the important lesson of *always* examining the nasal cavities and as a rule, especially in children, I readily find the cause of the eye trouble to be traceable directly to variable degrees of inflammation of the nasal cavities and nasal duct.

The second division of our subject, pathological conditions of the eye, dependent on hypertrophies, deformities or mechanical abnormalities of the nose, will open up a field of research more extensive than the time allotted to this paper will admit of.

Hypertrophies of the turbinates over-development of the ethmoid with frequently a deflected hypertrophic septum are among the important causes of producing pressure on the first or optic nerve, the ophthalmic branches of the fifth, and the various branches to the nose of meckels ganglion. Either by direct pressure or reflex irritation, we have a disturbance of the ocular muscle, a disturbance of the function of the entire nerve supply to the eye, resulting in atrophy, limitation of the field of vision and, in many cases, temporary blindness, which may become permanent. Polypi, tumors and the lodgment of foreign substances in the superior nasal cavities will produce like results.

It will be seen at once that our duty in these cases is apparent and that is, the removal of the obstruction, and unless of too long standing and degeneration of the nerve has followed, we may look for a partial or complete restoration of sight.

It is not my purpose in the present paper to enter into the discussion of the treatment of the various forms of nasal disease, with ocular manifestations, but to simply and if

Digitized by Google

possible, plainly point out the pathological conditions, which will indicate the course of treatment to follow by each physician as he may elect.

In this connection I will report a case that came in my practice in 1892, that had a direct bearing on the subject of the paper, and may be of interest to those present.

In March, 1892, Mr. A. L. C., of Hillsdale was referred to me by Dr. Moore, of the same city, for examination and treatment. The doctor in his letter stated, "that the trouble dated back seven years; that the more prominent and distressing symptoms were the left nostril and left eye. That the case had apparently resisted all and every form of treatment and that he had grave fears of malignancy, as there had been marked pain through superior nasal sinuses, globe of eye and temple, with a constant oozing of bloody discharge from nose."

I must confess that the history of the case, and general anxious appearance of the patient rather confirmed my belief in the doctor's suspicions of malignancy, although there had been no microscopical examination made. With this in mind I proceeded to a thorough investigation of the case. The left nostril was completely occluded with a fungoid mass, which would bleed profusely by a simple touch of the probe.

The left eye, the whole conjunctival tract, including the lachrymal duct presented evidences of inflammation of long standing, with copious purulent discharge and epiphora from occlusion of nasal duct. It was with great difficulty that I was enabled to insert a small probe into the post-nasal fossa. The hemorrhage was profuse and obstruction almost complete. I determined to enlarge the nasal opening, and consequently with a strong pair of curved scissors (after cleansing and disinfecting and the application of a 10 per cent. sol. cocaine) I removed a considerable portion of the fungoid growth, enough to admit a good sized probe into the nasal space.

As I turned the probe in various directions, I discovered in the cul-de-sac around the inferior turbinate a hard substance

Digitized by Google

that had the appearance of dead bone. By firm pressure I found it was detached and movable.

My inference was then that I had to do with simply a sequestrum and the next step was to gain enough space for its removal.

By the free use of the *chisel* and *saw* I opened the passage sufficient to insert a strong pair of forceps and grasped, and with a considerable difficulty removed the piece of dead bone, which, upon inspection, I found to be an *incisor tooth.*

As I held the substance up for inspection of my patient, remarking "that it was certainly an unlooked for and peculiar place to find an incisor tooth," he remarked, "There is that missing tooth which was kicked out by a horse twenty-two years ago."

He stated that he was kicked by a horse as above stated, which knocked out two of his upper front teeth, and as he could only find one of them, he supposed he had swallowed the other.

The interesting part of this case is that this tooth driven either through the hard palate into the middle nasal fossa, or back through the phoryngral vault could have remained passive, with absolutely no indication of obstruction or the presence of a foreign substance for a period of fifteen years, and then become detached and produce the long train of distressing symptoms before mentioned.

The subsequent progress of the case was one of rapid recovery. The fungoid growths were thoroughly removed by galvano-cautery, the conjunctiva and nasal ducts were cleansed by a simple antiseptic solution, with a weak application of nitrate of silver. This line of treatment was continued by Dr. Moore for six weeks, and the case was discharged as cured.

Digitized by Google

DISCUSSION.

Dr. Greene, Grand Rapids: I was very much interested in the doctor's paper, it is very able and sums up many of the causes of conjunctivitis. The obstruction consequent upon swelling of the turbinated bodies is a common cause of tears standing in the conjunctival sac. It is a well known fact, especially to oculists, that tears remaining in the conjunctival sac will after a time cause diseases of that membrane, and no matter whether there is an obstruction in the nasal duct or whether the obstruction be in the lachrymal sac or higher up, the effect is the same. It is an important matter to remove the obstruction, whatever it may be.

I think the doctor did not mention closing up of the opening or ducts from the frontal sinuses. Where there is a good deal of swelling or hypertrophy in the turbinate bodies the ducts which lead from the various cavities around the nose are liable to be closed up, and as a result pressure takes place from the accumulated secretion in those cavities. This is a very fruitful source of frontal headaches, and many times the patients are fitted to glasses for the relief of the headache, and they fail to be relieved and they consult another oculist who may readjust the glasses, without benefit unless he treats the nasal condition. I have seen cases which have been through the hands of three or four, each one perhaps varying the glasses a little bit when cautery of the turbinate bodies or perhaps removal of the hypertrophy, by some other means relieved the case entirely, and they went on and wore the glasses that had been adjusted for them by the other oculist. This is a very important subject.

The doctor's case which he related reminds me of a case I saw a few years ago where a man had suffered for many years from distress and an offensive purulent discharge from the

Digitized by Google

right nostril. He had been treated a great deal; he had been through the hands of several of these doctors who treat by the month, and they had sprayed him and sprayed him. Upon examination I found the lower turbinate body crowded out towards the septum; I found what I supposed to be a rhinolyth, but I could not remove it. The man said that he had been operated upon in a hospital in Cincinnati for that trouble and they tried to remove it, but told him it was an ivory growth and they could not remove it; I did an operation which was the first of the kind I ever did or had ever seen done. I exposed the parts so that I could get at it, by making an incision beneath the upper lip through the mucus membrane clear up to the cartilege of the nose. I took a pair of curved blunt scissors and cut the cartilage through and turned the nose and lip up over the face and then with a hollow chisel and mallet I opened into the antrum and found the antrum almost full of this hard deposit, which was really a rhinolyth extending into the antrum of Highmore. I removed it and the man got well and has been well ever since. That was five or six years ago.

The importance of a thorough examination of the nose and throat in cases of pain in and about the eye cannot be too thoroughly impressed upon us, and its importance cannot be too greatly emphasized.

DR. STRANGWAYS, FLINT: I am always glad to have attention called to the relationship between diseases of the nose and diseases of the ear. My observation leads me to think that the older writers on ophthalmology in their writings, as well as in their practice, did not recognize fully the amount of eye trouble that was caused by nasal trouble. I remember one case that I saw that had been under the treatment of several oculists of Chicago. She was under the treatment of Prof. Hotz two weeks before I was induced to examine the case. The diagnosis up to that time had been purulent dacryocystitis; I looked into the nose and saw pus coming down from the upper meatus, and passing in the probe I found dead bone; I passed my probe into the sac and by a little manipulation passed it on into the nasal cavity. The patient

Digitized by Google

was unfortunately suffering with a diseased ethmoid bone; it was a very serious matter. She passed out of my hands into the hands of Dr. Brown, I believe, and died as a result of the diseased bone in the upper part of the nasal cavity.

In my own experience I have found two troubles frequently associated with nasal trouble. One is dacryocystitis, or obstruction of the nasal duct, and the other is pain in the eye. I have had several cases that have baffled treatment for a long time until I cauterized or snared around the inferior turbinate or middle turbinate bones, by doing so I gave complete and permanent relief. One patient, a physician was almost decided to cease practice because of a terrific pain in the left eye. I completely relieved him with those two operations in the left nares. I have always had reason to suspect nasal trouble, and that it was a cause of the eye trouble often overlooked, and that is one reason why I think this paper is right. We should pay attention to it because in an occasional puzzling case we will find the trouble due to the nose when we have no occasion to suspect it.

Dr. Campbell, Detroit: I simply want to add my voice to those who have gone before and compliment the doctor upon his paper, and to say I believe it is an indication of the general feeling and the general opinion of the branch of the profession to which we adhere; not only that diseases of the eye are dependent upon diseases of the nasal cavities, but also upon a very widespread number of diseases in other parts of the body. The point of the whole matter is, we should do as the orator of this Section said in his address yesterday forenoon, we should make not only an exact diagnosis, but we should make a complete diagnosis; that is, we should not only know what is the matter with the patient's eye before us, but we should know whether or not there is a pathological condition in any other part of the body that might possibly have a bearing on the case under consideration.

The case that Dr. Strangways reports reminds me of one that I saw in consultation with Dr. Inglis four or five years ago. This gentleman had been the subject of intense supraorbital neuralgia of the left side for a number of years. He

Digitized by Google

was one of those peculiar individuals who kept track of all the medicines he took. He told us, and showed us in his memorandum book, that he had taken 2,918 black pills and 3,117 red ones, in the control this supraorbital neuralgia from which he was suffering; yet a simple spraying of the nasal cavities with cocaine, contracting the tissues, temporarily of course, temporarily relieved his pain completely; so that a thorough cauterization of the hyperthrophied tissues in the turbinates produced a complete cure of the case, showing that undoubtedly it was a case of neuralgia or reflected pain from the pressure exerted by the swollen turbinate. I think perhaps the point of the use of cocaine as a means of diagnosis, is a valuable one. In these cases of supra-orbital neuralgia, very often the spraying of the nose with cocaine, which has the influence of contracting the tissues and relieving the pressure temporarily, will give us temporary relief and establish a possible connection between the disease and its aetiologic factors. The use of cocaine by the patient himself should never be permitted, because of the danger of inducing the cocaine habit.

Dr. Maire, Detroit: The paper illustrates the importance of remembering that we are physicians, not specialists entirely, and should take into consideration the whole body. It has been my practice always, in fitting glasses, to make a thorough ophthalmoscopic examination. If the symptoms in every given case are such as to indicate any probable disease of the nasal passages, we should make an examination of those passages. I think in this way we arrive at the proper diagnosis better than by a mere perfunctory examination of the eye for refraction, because in many of these cases the eye symptom is simply reflex, such as the case of the doctor's.

I find in quite a proportion of the cases, where there is a liability to gather tears, that the mucous membrane covering the turbinate bones has become swollen and acting as a valve, the lower end of the nasal duct is closed completely, and this prevents a thorough drainage; and, as has been stated, the retention of the secretions will soon set up a conjunctivitis and its attendant symptoms. I had a similar case to the

Digitized by Google

doctor's a few years ago in which I removed a piece of wood the dimensions of which were one-half by one-fourth by one-eighth inch in size. It had remained in the frontal sinus for four years as a result of an accident; in this case the young man complained of the symptoms laid down in the doctor's paper. A thorough examination revealed conditions which made it possible to give relief. The case improved right away. I think we ought to examine all the organs where a case seems to demand it.

DR. BULSON: I briefly touched upon some of the minor points of cases of ocular disturbance in this paper, and am very glad it has been so fully and ably discussed by the members present.

I believe that a large number of cases of asthenopia are directly due to nasal obstruction, nasal irritation or by reflex irritation. I have only in a few cases found it necessary to operate on the ocular muscle to relieve this disturbance. I have in mind a prominent lady in Jackson to whom I adjusted glasses ten years ago, but failed to get a favorable result. She had a constant pain through the muscles of the eye. While in New York she consulted a prominent oculist, who adjusted compound glasses and she supposed she would have no further trouble. But on her return home was still suffering as before. I had not previously examined the nasal cavity, but upon examination I found a large turbinate and bony spur, and removed it, and her headache and the ocular disturbance immediately subsided, and there has been no return of that disturbance since.

I am glad that the Section on Ophthalmology of the American Medical Association have adopted this subject as one to be discussed at their meeting in Columbus. When we come to consider the large number of children who are wearing spectacles, it becomes a question to explain to the people, who say to us, "You have got in the habit of putting them on children who complain of a little disturbance of the eye." Our city is flooded with opticians who will give a free examination to any one who will consult them, and as a result the school children are loaded down with this burdensome incum-

Digitized by Google

brance. It is true that a large number of children have hyperopia and need glasses, but before these are given we should correct the nasal disturbauce and let the eyes alone. I am glad that the profession is looking after this one essential, (i. e.) to discover, if possible, any and all disturbances which may arise in the nasal cavities by reflex irritation.

Digitized by Google

THE CORRECTION OF DIVERGENT STRABISMUS BY A NEW METHOD.

D. MILTON GREENE, M. D.,
Grand Rapids.

It is not the desire of the writer to enter into a detailed discussion of the ætiology and diagnosis of the various kinds of squint, or to review the different operations for their correction. I shall not thresh over old straw by reiterating what can be found in every text book of Ophthalmology, further than is necessary to bring this subject before you.

The various operations which have been proposed and practised for the correction of divergent squint, as is well known by those experienced in operating, have not been universally satisfactory to the surgeon, or to the patient. In fact few oculists of wide experience with whom I have discussed the operation of advancement of the rectus internus for divergent squint have hesitated to acknowledge their failures, and that the operation is one unsatisfactory in many instances. There is no operation which I have undertaken with greater circumspection and fear. Whether the operation be that of George Critchetts, or the hitching thread of Agnew, the anchoring thread of Prince or the clamp forceps of Wecker, while each has its advantages, they have also elements of weakness. One common source of failure, however, is cutting the tendon from its ocular, or bulbar attachment.

When the tendon is once severed, or cut loose, and fastened by sutures, should the sutures fail to hold it, either because of slipping or cutting through the tissues, which they so frequently do, the muscle is liable to recede and the deviation of

Digitized by Google

the eye outward to become greater than before the operation. When this accident has happened a second operation is hard to execute, and is undertaken with dread by the surgeon as well as by the patient. If the sutures which are passed through the conjunctiva and emerge near the vertical diameter of the cornea (as in the Critchett operation) cut or slough, very little effect of advancement will be secured. If the sutures are carried into the scleral or epi-scleral tissue, deep enough to prevent their cutting their way out, there is danger of wounding the intercommunicating lymph spaces and filaments of the ciliary nerves. Again all operations in vogue necessitate leaving in the sensative conjunctiva several sutures and knots which excite in many instances a high degree of inflammatory action and swelling, which tends to cause divergence of the eye, we have tried to converge by the operation. I had tried several expedients to get rid of the objectionable features of the operation which I have already mentioned, when several years ago I conceived the idea of taking a tuck in the tendon, which I did several times by the use of sutures. I thought it a new idea, but upon searching the literature on the subject, found it had been done before by J. F. Noyes, of Detroit, in 1874, and by Laglease in 1892. The methods proposed by them, while doing away with the dangers of detaching the tendon, still necessitate the objectionable conjunctival sutures. To avoid these, and the bad results of the muscles slipping back, and the consequent divergence of the eye, I have invented an instrument called a tendon tucker.

The instrument is made with two spring blades like those of Knapp's roller forceps. On blade 1 there is a tine about ten m. m. in length and one m. m. in diameter, tapering slightly towards the point, and turned at right angle to the edge of the blade. On blade 2 there is an angular arm 12 m. m. in length turned at right angle to the flat of the blade and towards blade 1. On this arm is a tine turned at right angle to the edge of blade 2 and parallel to the tine of blade 1, and of the same size. It is so constructed that the tine of blade 2 passes beneath blade 1. A set screw with a milled

Digitized by Google

nut passes from blade 2 through blade 1. With this the blades can be fixed at any point desired. It is better to have two instruments, one for the right and one for the left eye, so that the tines can be inserted from above downwards, which gives free access for the introduction of the suture in the tendon, the blades being above and out of the way. With this instrument the operation is much easier executed, and is done with less risk and in much less time than by the old methods. Those who have tried the muscle folding operation of Noyes and Laglease by the use of sutures, have, I believe, found it a difficult task to perform. My operation is quite different from any other and is done as follows: The patient is told to look to the side in the direction of the divergence, thereby turning the eye as far outward as possible. The conjunctiva is raised with a pair of fine forceps (iris forceps are good) and with a pair of fine curved scissors, with the hollow side toward the cornea, commencing near the corneal margin (two or three m. m.) and six m. m. below the horizontal axis, a curved incision is made ending at the horizontal axis, about twelve m. m. from the sclero-corneal margin. Then turning the scissors and commencing above the horizontal axis about six m. m. a second incision is made to intersect the first, thus forming a flap twelve m. m. in length. Two incisions are now made in the conjunctiva, one obliquely upwards and inwards and one obliquely downwards and inwards. These latter incisions include Tenons capsule.

When these flaps are turned back the tendon of the internus will be fully exposed. The muscle and tendon are then separated completely from all surrounding tissues, except its attachment to the globe. When free, the tine of the straight blade of the instrument is passed beneath the tendon from above downward while the tine on the angular blade rests upon the tendon near its insertion. Now by pressing the blades the tine resting upon the tendon passes under the other tine, and makes a tuck in the tendon which it pushes beneath the muscle. Now the milled nut is screwed down, and when the eye is perfectly straight, or has been carried inward a little past a correction, the instrument is held by an

Digitized by Google

assistant, and a stitch is taken in the fold of the tendon as follows: A No. 1 sterilized catgut suture is armed with a curved needle at each end. One needle is passed through the fold between the tines, from within outwards about one m.m. from its upper edge; then the other needle is passed through in like manner one m.m. from the lower edge. The needles are now removed and the two ends of the suture tied, which securely holds the fold. The conjunctiva is now replaced and a stitch or two taken in the flaps which brings them over the catgut suture and the folded tendon and causes the conjunctiva to unite in thirty-six or forty-eight hours. The eye is bandaged for a day, or cold compresses may be applied for a few hours and then bandaged. There is a slight lump left at the point where the tendon is folded, but it soon disappears. The tendon in cases of divergent squint is usually elongated and thin, reaching 12 to 15 m. m. or more, while the tendon normally is but 8.8 to 10 m. m. in length. This thinning of the tendon makes the old operation harder and the one with my instrument easier to perform, than if it were in the normal condition. Should the suture fail to hold the tendon until union takes place in the fold, a second operation is easy to perform because the tendon is in its normal position and attached to the globe, and will not recede as sometimes happens when it has been detached. This accident has never happened to me after an operation of tendon folding such as I have described. The cause of failure in other tendon folding operations, which have been done by stitches, is that the surfaces of the folded tendon are not brought into perfect coaptation. With the instrument which I have devised the tendon is perfectly folded and held while the suture is inserted and securely tied across the fibres of the tendon, instead of lengthwise as is the case in some operations.

Digitized by Google

DISCUSSION.

DR. BULSON, Jackson: I am pleased with this little instrument. There is something about it that is unique, and it is practical. While perhaps it is only occasionally that we have to resort to this operation, still it is an instrument that would be very desirable and would undoubtedly expediate the operation.

The question has been brought up in my mind in regard to the use of catgut suture, whether it is not better to have the silk as more reliable.

I am pleased with the new instrument and thank the doctor for presenting it at this time. I believe it is practical and will become more so, as it is better understood.

DR. LACRONE, Kalamazoo: I want to ask the doctor whether there is any danger of absorbtion. My experience is that this tendon straightens out after a while. I have had better results with Beard's operation, regulated by a stitch. Certainly if this would hold it in position, and the inflammatory exudation thrown out would not be absorbed afterwards, it would be more satisfactory than cutting the tendon. I take it the most of us have had some bad results from the cutting of the tendon and if the inflammatory deposit does not absorb it is a decided improvement over the old operation.

DR. STRANGWAYS, Flint: I wish to congratulate Dr. Greene. I think he has invented a good instrument, but there are two points I would like to ask him about.

First. Why the two points are so sharp? It strikes me it would be easier to handle if they were not so sharp; but experience is a better teacher than theorizing.

Second. Why has he the distal ends at right angles to the shaft of the instrument? It seems to me it would be easier to put it under the muscle if the instrument were straight than

Digitized by Google

it is to put it under in the way he describes. You would then have nothing between your hands and the tendon to interfere with the putting in of the stitches. Besides that, if you have it put up in the way described you must have attendant to hold it, but if the instrument were straight you could rest it upon the cheek if it was made a little longer, and it would not require an assistant at all times.

DR. CAMPBELL. Detroit: It seems to me that the doctor should be congratulated upon the introduction of this instrument. It seems to me from its description it is a practical thing, but at the same time my mind is very doubtful whether the operation itself is expedient. The operation is one that the late Dr. Lundy taught me to do, and he did it himself for a number of years in his usually efficient manner, and which we abandoned for the reason that almost all the operations we had for divergent strabismus were failures—not immediately, but later—the reason seemed to be that the folds in the tendon would straighten after a while. I do not think the operation of folding the tendon is a new operation at all. My impression is, from what I have seen, that Dr. Lundy used it twelve years ago, and that it had been tried and as a rule found wanting in that respect, that is as to the permanency of the correction.

DR. FROTHINGHAM, JR., Detroit: I have been very much interested in the instrument. The doctor showed it to me yesterday, and as the results of the operation of folding the tendon for divergent strabismus have not been permanent, I should like to ask the doctor how long he has practiced the operation, as he describes it, and if he has watched the cases long enough afterwards, so as to know whether the results are permanent or not.

DR. GREENE, Grand Rapids; The question Dr. Bulson asked about the use of silk instead of catgut, I would answer as follows: If anybody prefers to use silk of course they can do so; I prefer to use catgut. I have had no bad results. Silk would not be absorbed. Whether it would become encapsulated and in that way prevent future trouble is a question I cannot answer, because I never used it in this opera-

Digitized by Google

tion. I use the catgut and it has given satisfaction so far. I do not think that catgut in an eye is absorbed in three or four days or five or six days; I do not think that catgut is absorbed until after union takes place in the tendon. The tendon is more or less irritated by separating the tissues, more or less of the fibres of the capsule are merged into the tendon and in separating them, we excoriate the surface of the tendon more or less. If deemed necessary, and the tendons seem to be too smooth, it would not be a hard matter to scrape it or irritate it with a Beer's cataract knife or some instrument of that kind. I think catgut will hold the tendon until union takes place, especially until union takes place in the capsule and the conjunctiva. I have had no trouble with its slipping back. I use No. 1 catgut, and should not be afraid of the fold drawing out if the catgut came out of an oil preparation. It is not as quickly absorbed where it comes out of the Juniper oil, as it is when prepared in other ways.

Dr. LaCrone said he preferred dividing the tendon. I know a great many have preferred lapping and sewing it together, but if Dr. LaCrone can tell what advantage there is in cutting the tendon in two, I would like to know what it is. If the tendon was split and slid up, one part over the other, in that way, it might unite quicker than if it was folded, or you simply drew the tendon up and lapped it. I do not know what cutting the tendon would add to the tendency to union. I do not think it adds anything to it at all. I think anyone who has had experience with these extreme cases of divergent strabismus, will admit that the tendon is very thin and very much stretched out, and the splitting of the tendon is not practical. To cut the tendon off and lap it would add to the operation the danger of having the muscle loose, wherein if union did not take place the muscle would recede and be hard to find in a second operation.

Dr. Strangways spoke of the points of the instrument. There is nothing to pierce with the point of the instrument that would be dangerous except the sclerotica. You notice if you take the instrument and press the points on your skin, they are not sharp enough to pierce it, and an instrument

Digitized by Google

that is not sharp enough to do that will not pierce the sclerotica. The advantage of having the tines brought to a small degree is, if your fold is small you can slip your needle between the tines, and when you draw the sutures tight the tines slip out easily. It slips out much easier with the tapering tines, as they are in this instrument.

The position of the instrument which Dr. Strangways spoke of was considered very thoroughly. The advantage is the fact that you have in the eye, a speculum to hold the lids apart; and if you undertake to have another instrument in the eye that crosses the blades of the speculum you have a bungling job as you have one instrument overriding the other.

When you undertake to put sutures in you will find you have something that is quite impossible to do, especially if the eyes are somewhat deep-set, it will make the operation quite impossible; while these blades are short, and it passes over the cornea and will rest between the blades of the speculum. It is a very easy matter always to get somebody to hold the instrument, because if it is some patient who comes to your office with a friend the friend may assist you, and if there is no one else at hand most doctors have some office help whom they can get to assist them, and they can hold it very easily. They simply rest the hand upon the patient's head while they hold the instrument in place.

The failures of which Dr. Campbell spoke I am well aware of. I mentioned that in my paper. While I thought eight or nine years ago that I had evolved something from my brain, an operation that was new, when I came to search the literature upon the subject I said, as had been said before, "there is nothing new," etc. I found that Noyes—who, by the way, was a Detroit man—in 1874—and that was a long time ago—read a paper on the subject of folding the tendons, and in 1892 the next man to read a paper advocating the tendon folding operation way Laglease. They are the only ones I can find in searching the literature who devised anything new in the way of tendon and muscle foldings. There are many who do the operation, or who have undertaken it for a

Digitized by Google

time, and then abandoned it. Knapp and Prince, and all those men, have tried the muscle folding operation. You say it has been unsuccessful, and therefore it has been abandoned. I will tell you why it has been unsuccessful, in my opinion: The operation that has been done heretofore has been done by the introduction of sutures. Now, it is quite impossible to introduce sutures in a tendon, to bring the tendon together so as to suture it as firmly and make the fold as complete and accurate as this instrument will do it; and I think it is the failure of getting the tendon, or rather the two surfaces of the tendon, together, that has caused the failures in union, and I think they have slipped on that account. If they are pressed accurately together and then united by a suture, I do not know why the tendon of the internal rectus muscle should not be united as readily as any other. It is a fact that sometimes the tendon is somewhat smooth, but in a case of that kind it would be very easy to roughen the tendon by scraping; but, as I have said, I never yet have seen a case where it was necessary. Of course, this instrument has got to be tried. It was not at very great expense, either of money or mental effort that I evolved this little idea, and it can be tried as thousands of things have been before, and if found wanting in the hands of the profession they are at liberty to lay it aside. I do not propose to be paid for the instrument; I have not any patent on it, so that the price will be very reasonable. However, if you get any good out of it, I shall be pleased, and I hope you will.

Another thing about this instrument is the fact that it will straighten the eye and you can screw the little nut down until you have carried the eye in position where you want it. You cannot do that with a suture. This is one advantage of this instrument over any other. When you have got it where you want it you can hold it there. It does not give one way or the other. It has been my observation that the external rectus muscle is not overstrong in these cases of divergence. I had rather not divide the external rectus muscle if I can get along without it. I do not do a tenotomy of the external rectus

Digitized by Google

muscle always, I have not found it necessary. If you find upon trying to straighten the eye with the instrument that it does not come to its place, and there is too much resistance, I would advise tenotomy of the external rectus muscle. The capsule is divided, as I stated in my paper, by an incision. I do not believe in the advancement of the capsule of the Tenon.

Digitized by Google

TREATMENT OF DISEASES OF THE EAR.

W. F. STRANGWAYS, M. D.,

Flint.

That I may occupy no more of your time than is actually necessary, I shall not repeat any of the ideas commonly found in text books on diseases of the ear, but will proceed at once to discuss certain means of treatment from the standpoint of my own experience.

First. For years I have studied ordinary ear syringes and now feel justified in condemning their ubiqutous use for cleansing the ears. Such syringes are excellent appliances in selected cases, but in the majority of cases are more than useless. To remove cerumen, some of the common ear syringes should be used if the tympanic membrane is not perforated. They will remove pus from the auditory canal but they will not remove it from the middle ear unless the aperture in the Membrani Tympani is very large. For removing mucus, muco-pus and membranous materials from either the canal or middle ear the ordinary ear syringes are of secondary importance. Forcing a stream of water in the auditory canal is not always a harmless proceedure. Indeed many ears are seriously damaged by the too common use of syringes. I believe it is bad practice to direct parents, friends or patients to use aural syringes, unless the physician gives such treatment his careful supervision. Cleanliness is next to godliness in medicine as well as religion. If by the ordinary use of the syringe we secure cleanliness my argument is useless, but experience teaches me that the syringe leaves a residue in the crevices and it is this residue that perpetrates the trouble.

Digitized by Google

Second. I wish to state my opinion of the peroxide of hydrogen. I believe for aural trouble it is tremendously overestimated. For years I have used it more or less, chiefly less, and cannot recall a single case where it was a decided benefit. It makes a fine froth and that is about all it does in the ear, unless it irritates. Pus that it will break up and cast out is easily removed by other means. For mucus, muco-purulent and membranous materials it is useless. It is a fairly good hemostatic, but, in my opinion, it should never be used in a routine manner for cleansing the ear.

Third. When we criticize or object to means of treatment used by others we should, if possible, make known the means we think better. To cleanse the ear I always use head mirror and aural speculum and except in cases of impacted cerumen I use fine applicators that are easily bent, aural forceps, fine absorbent cotton, also air by inflation and occasionly Anel's lachrymal syringe to which I attach a long slender silver end piece. As I can bend this end piece I prefer it to the middle ear pipettes usually recommended. By bending the distal ends of my slender applicators to angles of from 100° to 120° I can reach almost any part of the middle ear through the ordinary perforation.

Fourth. During the last fifteen years we have been too much inclined to use new remedies, especially those that are well advertised by the proprietors. No doubt each new drug has its virtues but I believe as a rule the old remedies are far better and we as a profession, should give more attention to the remedies of the past centuries and less to the much vaunted proprietary remedies of recent date. It is true we are more scientific than our fathers, but they were just as keen, practical observers and trained thinkers as we are. What they used empirically we may use scientifically with excellent results.

These reflections suggested to me the use of Tincture of Iodine for inflammatory diseases of the auditory canal, and for some years I have used it with marked success; it quickly aborts furuncles and banishes the chronic and sub-acute inflammatory troubles, if there is no discharge from the middle

Digitized by Google

ear. It has a charming influence over many of those annoying cases of intense itching of the auditory canals. As a rule, twenty minutes after I apply the iodine I besmear the surface with some unguent.

Another old remedy is Tr. Benzoin Co., which for many years was a well known household remedy for various complaints. Friar's Balsam, Wade's Drops and Jesuits Drops are names given to it by the masses. It acts very kindly on the mucous membranes, lessening chronic discharges and chronic inflammatory actions. Some of the older aurists have inflated the ears with air charged with the vapor of this tincture, but I can find no literature that speaks of the direct application of the Tr. Benzoin Co. to the mucous membrane of the middle ear. I have used it for all kinds of middle ear diseases with discharges, and have had far better results from it than I have had from all other applications combined. Many of the middle ear diseases which are characterized by chronic discharges are made worse by water and the various remedies for which water is the vehicle.

All powders have serious drawbacks when used for middle ear troubles; sometimes we credit them with quick cures but it is possible they simply completed the circumstances necessary for coincidences. I have yet to observe the first case where I believed a powder cured a middle ear disease.

Cleanliness makes most of the cures. Cleanliness means the removal of all secretions from the crevices of the middle ear. In my experience, Tr. Benzoin Co. stands next to cleanliness. I apply it with a cotton swab after thoroughly cleansing the middle ear; all the surplus is mopped out. Mucus or pus precipitates the resins in Tr. Benzoin Co. giving it a whitish appearance; when I remove my swab I examine it carefully, and if I find any part of it whitened by the precipitation of the resins, I know the ear was not properly cleaned.

I shall not detain you by giving histories of cases where the syringe failed to clean the auditory canal or middle ear, where hydrogen peroxide did some harm and no good; where

Digitized by Google

Tr. Iodine cured diseases of the auditory canal after I had exhausted the virtues of all other means; or where Tr. Benzoin Co. has helped me cure old obstinate middle ear diseases; for without trouble or inconvenience you all can determine in your own practices, how much virtue there is in the suggestions I have made.

Digitized by Google

DISCUSSION.

DR. GREENE, Grand Rapids: I have been pleased with Dr. Strangways' paper. I have long since abandoned the use of peroxide of hydrogen in the treatment of middle ear affections. I think it is pernicious, and I think as Dr. Strangways says, it is overestimated, and has been abused. I find frequently that the general practioners have prescribed the use of peroxide of hydrogen and have put it in the hands of the parents or the family to drop into the ear, but I never saw any good results from it, and I have seen positive harm come from its use. It favors coagulation of the albumin of pus that has been attacked by the peroxide but has not been destroyed; it will neither flow out nor come out by the use of peroxide, but simply remains in the middle ear cavity. I do not believe that boracic acid inflation or impaction, or any use of boracic acid powder in the ear ever did any good. I believe the main thing to do is to keep the ear clean, let the discharge come out, open up the drum membranes, and if there is a hole in the drum membrane keep it clean, but let out the pus that is manufactured in the middle ear or in the attic and try to cure the condition which causes the discharge, either by the removal of dead ossicles or the application of alterative remedies to the diseased mucus membranes and by the treatment of the nose and throat. I wish to say I have used a remedy for cleaning the middle ear and the auditory canal with a great deal of pleasure and success; it it simple, it is no ones manufacture, it is albolin, or any other of the coal tar oils in which eucalyptol and thymol have been dissolved. It is a powerful antiseptic; it dissolves the dry pus. With a little cotton on the end of the applicator, as the doctor spoke of, dipped into the solution and passed into the ear and mopped around, it will cleanse it from pus, and being a powerful antiseptic it

Digitized by Google

keeps the ear in as nice and clean a condition as anything I have ever used. Another thing that it does: It is very well-known that applications in the auditory canal are very apt to cause furuncles, the irritation causes these little swellings and sometimes suppuration. I have never seen it occur from the use of the remedy I have mentioned. In fact, I have seen bad cases of furuncles disappear very rapidly under the application of that very penetrating product with thymol and eucalyptol dissolved in it. I have wondered whether any other aurists use this remedy for cleansing the ear. I have found it better than irrigation. I have never heard an aurist say that he used it, and I would like to know whether it has been the practice of others.

DR. AMBERG, Detroit. The question of syringing the ear is a very important one. With some ears I use the syringe, and with some I do not. If there is considerable discharge I syringe the ear, as a rule. Now, I would sometimes not syringe an ear, only for the reason not to carry microbes from the meatus into the middle ear. There might be a certain kind of microbe in the middle ear, but another in the meatus. (e.g., When there are furuncles of the meatus.) I think every single case of middle ear disease is to be treated according to the principles of general surgery. Every case is a case by itself, and we cannot put up any rules for treating all cases. Do I understand the doctor right that he uses a bent tip in the middle ear? I should like to call attention to the application with this tip. It is to be made very carefully, because we might perforate in some way or other the tegman tympani and get a complication. Coming back to the common syringe, I should like to say that, as a rule, I use the syringe in chronic cases. However the syringing is only part of the treatment. I syringe the ear carefully, not with plain water but with a solution of boric acid, about a teaspoonful to a pint. Sometimes a physiological sodium chloride solution is preferable. When there is a small opening in the drum membrane, the boric acid sediment, or boric acid powder, when the latter is used might close the opening and we might have disagreeable experiences. Concerning the furuncles in the meatus, of which

Digitized by Google

Dr. Greene speaks, I do not believe they are caused so much by drugs, used in treatment of the middle ear, as by infection originating from the middle ear, especially when the skin of the meatus is hurt by unskillful manipulation with instruments. The doctor says he always uses a mirror and a speculum when treating the ear. It would be a nice way to treat the ear without a mirror and a speculum. I think to treat the ear without a mirror and speculum would be like doing an operation for the diseased appendix in the dark, without looking at what we are doing.

In regard to new remedies, I should like to say a few words. There was a French professor who told his pupils whenever a new remedy came up to use it quickly, because after a while it would not be so successful. I think some errors come in this way. A professor, or whoever it may be, gets a new remedy, and he pays special attention to the cases treated by this new remedy. Those cases would, perhaps, get better if he did not use the remedy at all, but if he would only use the greater care, more care, at least, as sometimes is allowed to policlinic patients. There is one thing that I regard also as maltreatment of the ear, and that is the ubiquitous use of massage of the ear, and I should like to have heard from the doctor what opinion he has formed about this question, which is not much less important than the question of syringing. I was very much interested in the paper, and am only sorry that there are not more papers of this kind in this section.

Dr. Greene, Grand Rapids: I do not want the impression to go abroad that I always use the remedy I spoke of in cleansing the middle ear or auditory canal. I take it from the doctor's paper that he had reference especially to chronic middle ear affections, chronic discharge. In acute cases where there is much myringitis and inflammation of the tissues in general, I use irrigation, hot water, and instead of using boracic acid, which I think has very little effect, I use bicarbonate of soda. It allays the inflammation and is very cleaning to the parts, and I have the solution used hot and use a quart at a time to irrigate the ear. Sometimes in acute inflammatory troubles I have it used very frequently, maybe

Digitized by Google

three or four times in a day, and with great care as to the force. Hot water with the bicarbonate of soda is a very safe remedy, in acute cases: I was referring to chronic cases when I spoke of the use of the swab with oil.

DR. CAMPBELL, Detroit. Dr. Strangways has given us a very good and a very practical paper. I congratulate him upon what he said, and would add just a few remarks.

As to the syringe: I think perhaps what the doctor said might be misunderstood. The syringe I think — and I think probably he thinks so too — is a valuable means of cleansing the ear, but it is not a complete means of cleansing it. Is that your point Doctor ?

DR. STRANGWAYS: I used the words "obiquitous uses of the syringe". I find patients coming to my office nearly every one of whom has been directed to use the syringe, and I think the syringe should be used in the selected cases, proper cases. Those proper cases do not even take in fifty per cent of all the cases we treat; it takes a certain percentage, but not all.

DR. CAMPBELL: That is my idea; it does certain work, but it does not do all the work in the matter of cleansing the ear. Now peroxide of hydrogen in my opinion has not done much good, perhaps no good, and there are but few cases where it does harm. I do not think so far in the discussion the reason why peroxide of hydrogen does harm has been touched upon. It seems to me it is in the cases where you have a small perforation in the tympanic membrane, where the peroxide finds its way into the tympanic cavity and in its contact produces a gas under pressure and drives the morbific products of the suppuration into the deeper structures of the ear — it seems to me it occurs in this way: When the gas is under pressure it takes it into the deeper structures and carries with it the microbes or the suppuration, whatever may be present in a given case. As to the question of furuncles, it presents itself in this way; That is a microbic disease, it is due to infection of the skin of the auditory canal. In these cases where we have furuncular disease we have associated with it solution of continuity and eczematous condition of the skin of the

Digitized by Google

auditory canal, presenting a point of entrance for the infection. We know that the application of water to an eczematous condition, especially in confined localities, is liable to perpetuate the eczema; therefore in a furuncular disease it has been my custom to interdict the use of watery solution completely.

DR. FROTHINGHAM, JR., Detroit. The paper and discussion have covered the ground very fully. I have not used the peroxide of hydrogen to any great extent, as in those few cases where I did use it, I did not get any satisfactory results. I know of several cases where it produced marked symptoms of mastoid disease. By its action on the mucous membrane it causes swelling sufficient to prevent a free discharge through the opening of the mastoid antrum, and in this way is liable to produce dangerous conditions. As to what the doctor says about syringing the ears, I believe it is the only way to thoroughly cleanse the ear. I use a saturated solution of boric acid, or 1-5000 bichloride of mercury and sufficient at each sitting to thoroughly cleanse the ear. If the discharge is very profuse, it should be done frequently. This should not be left entirely to the nurse of patient as they will not be thorough. Several, this afternoon, have condemned the use of boric acid powder. In cases where the discharge is very abundant, I do not believe it is of any benefit, but when these cases have reached the later stage where the discharge is less profuse and muco-purulent, it can be used with great benefit if there is a large opening in the tympanic membrane, but should the opening be small, it does not act as well, and solutions of sulphate of zinc and boric acid will be of more benefit.

DR. MERRILL. I think the treatment of the disease the the doctor has spoken of is like every other kind of trouble, we have to use judgment in the premises. In my opinion, I think the syringe is the most valuable thing we have in cleaning the ear. How many times have we seen patients brought to us with foreign bodies, where the ear is bleeding and lacerated by the use of instruments, yet one or two syringings washes it and throws the foreign body out; I have seen that a great many times. I think it is a valuable thing in the treatment

Digitized by Google

of this kind of cases. What we want to use is an antiseptic solution, and I think boracic acid solution is valuable. In treating discharges from the ear we are not treating discharges from the canal; we are treating a discharge from the middle ear or from the mastoid cells, and in that case what we want to do is to find out where the pus comes from first. I believe in the syringe, because we do not always have patients who can come to us every day, sometimes on account of the distance they live away they can only come once a week. What are they doing in the meantime? So I say I believe the syringe is a very valuable instrument when used in a proper way with a proper antiseptic solution which is cleansing. About all we can expect of the patients is that they will keep themselves clean in this trouble.

Now peroxide of hydrogen is a very good thing when used in a proper kind of case. I must confess I do not use it, I used to, but I do not now, for the reason that Dr. Frothingham gave. I was satisfied it produced mastoid diseases in one or two instances. I have found great value in the packing of the ear with boracic acid in proper cases; when the discharge becomes mucous then is the time to use it. If there is anything we want drainage for it is disease of the middle ear. We should keep up the drainage, it is absolutely necessary. I think the less we introduce instruments into the auditory canal and into the middle ear the better it will be for the patients and the better for ourselves. I think that we should consider also the fact that we cannot always treat patients in the office.

Dr. LaCrone, Kalamazoo: I want to congratulate the doctor upon the excellent paper he has read; I want especially to indorse what he said about the use of peroxide of hydrogen. I think you can keep up the discharge almost indefinitely by its use. Of late I have used formaldehyde gas in the old chronic suppurating ear cases as well as in the acute and have had success enough to warrant continuance.

Dr. Stewart, Battle Creek. I heard very little of the discussion. There is only one little matter I would like to mention, and that is in relation to the syringing of the middle ear. I think the extent of the benefit we get from the syringe will

Digitized by Google

depend a great deal on the patient as well as on the kind of trouble. Now I think you have all met cases where you treated a wound of any description or sort, it makes very little difference in what part of your patient it may be, where water seems to be almost poisonous, it might start an eczema and it might just simply keep up the existing trouble, and I heard Dr. Campbell just mention a part of that trouble. In some of those cases I have tried syringing and it seemed as though it would never stop. I cleaned it out as thoroughly as possible. I have been careful for fear of forcing the solution further in and it seemed it would never dry out. By never touching that ear with water, but taking cotton and drying it and keeping it dry, probably blowing a little boracic acid powder (that is my preference), or some simple treatment like that, I get better results than with a syringe. That is about all I could safely say about it. I would suggest in cases where they are particularly obstinate, and where it can be reached, you will find cases where no matter how gently the syringe is used harm comes; there seems to be something inherent in the tissues itself that the water seems to be almost poisonous.

Dr. Strangways, Flint. I am very much pleased with the discussion. I am sorry I am not a good orator, or that I cannot use the English language well. Apparently the members have misunderstood me. I do not think there is a single dogmatic expression in my paper. I agree with Dr. Merrill that the syringe is an excellent instrument and my paper says so. It is the ubiquitous use of the ordinary ear syringe, not by specialists but by patients I condemn. I do not think I ever saw a specialist use the syringe in a way I could criticize. I am referring more to the careless prescription of it or the advice given by men who give but little attention to diseases of the ear, and the using of syringes in the home. I find in my own home, the city of Flint, that there are persons who get acute inflammation of the ear, and when they use the syringe seem to think they have done all that can be done. They come into the office and say, "I saw the doctor and he gave me a syringe". I have looked in and I have found furuncles, and no middle ear disease after all. We know that water seems

Digitized by Google

to perpetuate furuncles of the ear. If we want to get rid of them we must keep water away and use oily preparations, or as I said, the tincture of iodine. My paper called attention to that in these cases of furuncles of the ear. One Sunday I stepped into Dr. Knapp's office, and the doctor complained of severe ear-ache; he was afraid he was about to be laid up. I looked at the ear, I could not see any furuncles; I saw a redness on the outer part of the canal, the drum membrane was quite irritated in appearance. I asked him for some tincture of iodine and was given Churchill's tincture which I applied and fifteen minutes afterwards the doctor's ear was quite comfortable and he went about his work with no further trouble with that ear. I cannot find anything in literature upon the use of iodine for such troubles in the ear; possibly you all use it, and possibly it is in works I have not read.

The other point that I wish to call attention to is that chronic discharge of the middle ear that seems to resist all treatment, and is caused by a chronic inflammatory condition; I have found that tincture benzoin co. acts like a charm in these cases.

Dr. Greene asked me if I had used albolin. I have used it probably for six years and I look upon it as an excellent remedy for cleaning the ear at times, and I find as a rule it agrees with ears. I have found some cases where I thought boracic acid did good, but as I stated in my paper possibly the use of boric acid did good and possibly it completed a chain of circumstances that made a coincidence.

It has been suggested here that tincture benzoin co. is dangerous if there is a small perforation. I cannot understand how it could be dangerous, because if there is anything gathers in the middle ear it is a fluid, and if it is fluid it will simply wash out the resinous deposit. I think if you put it in any small aperture the fluid will press it out without any trouble. I think it would be dangerous where you had a small aperture if it made it heal over too rapidly.

Dr. Frothingham speaks of the use of the syringe for cleansing the middle ear. I can not imagine how the ordinary syringe—I am not referring to the ear syringes such as we use

Digitized by Google

with a small stem that can be passed into the middle ear, and in my paper I speak of using that, and my choice is an annel syringe—to throw a stream of water just at the outer end of the canal, can pass it through that canal and enter a small aperture, say three millimeters in diameter, and clean out the crevices in the middle ear. My paper refers to the ordinary ear syringe used by the patients. For years I have studied ordinary ear syringes, and I think the kind of syringes the specialists use and manner in which they use them cannot be considered the ordinary use of them when we remember the thousands and thousands of syringes used by people.

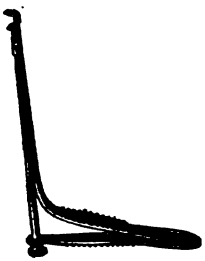
It was moved and seconded that the paper of Dr. Charles Baker be read by title and referred to the Committee on Publication; which was carried.

Digitized by Google

DEMONSTRATION OF SOME NEW EAR INSTRUMENTS.

EMIL AMBERG, M. D.,
Detroit.

Permit me to show a few new instruments, or modifications of instruments for ear work.



(1) A malleus extractor. The peculiarity of this instrument is that the bent end of one branch is movable in two directions. When the instrument is at rest it stays at an angle of about 45° to the bent end of the other branch. In closing it takes a turn of about 45° so that, closed, the two bent ends stand in the same direction. The operator can carry a part of the instrument behind the ossicle like a hook and the view is not obstructed.

(2) A modified forceps for sponging, which served me when assisting in mastoid operations. The long handle and the short branches seem to me to facilitate the work considerably.

(3) A sharp spoon for mastoid operations with a slight modification on the handle. The handle is broadened so as to give the thumb a rest.

(4) A metal tip for massage apparatus. It is naturally improper to use the same tip without being sterilized for different patients, and hard rubber and celluloid tips are not as easily cleansed as metal tips. The tip has to be covered with rubber tubing.

(5) A head mirror with a large hole, intended to be used in changing mastoid dressings. A mirror of this kind made

Digitized by Google

the work easier for me. This is understood when we consider that the mirror is some distance from the eye and that a small opening strains the eye and the muscles of the neck. It can also be used in throat work, but here the large opening is not quite so advantageous, because there is some loss of reflected light from the center of the mirror and the operator's eye is not so much protected when the patient coughs.

(6) A case for ear instruments for daily use. This case gives a clear idea how ear instruments can be properly carried. It contains three metallic boxes seven and one-quarter inches long, a little over two inches high, and about two inches wide. Two of the boxes allow quite a number of ear instruments to be carried in an asceptic condition; two small boxes are intended for used specula. These two boxes could be combined in one for longer instruments which have been used. The third of the larger boxes serves, first, as a sterilizer. It contains two transportable alcohol lamps. It took eight and one-half minutes to bring ten ounces of water to boiling. After the water boiled for one-half hour three and three-quarters ounces were left. Secondly it serves to carry three boxes, two inches high, less than two inches long and about one and one-quarter inches wide, for sterilized cotton, etc. Those three larger boxes are kept in another metal box. Surgeons have their own likes and dislikes about instruments. The kind of cases described might serve better than cases which allow just a certain kind of instruments to be carried.

Digitized by Google

THE COMPLICATIONS OF MASTOID ABSCESS.

CHAS. H. BAKER, M. D.,
Bay City.

Having decided that pus is present in the mastoid process and determined upon operation, the surgeon is at once confronted with the possibility of complications, any one of which may be a source of grave anxiety to the operator and danger to the patient.

The first of these are incidental to the operation itself, and are due to anatomical peculiarities.

If there is no anomaly in the anatomy of the patient, the usual mastoid operation is simple and comparatively easy, but on one hand may be the Scylla of an abnormally placed lateral sinus, and on the other the Charybdis of a misplaced facial nerve.

The point of election in operating for mastoid abscess is the triangle formed by two lines tangent to the posterior and the superior edge of the bony margin of the auditory canal and the margin itself.

With the external table penetrated at this point and careful use of the chisel held at an acute angle with the surface of the bone, it is possible to remove the external table of the mastoid process without much danger of wounding either the sinus or the nerve, even if displaced. The facial nerve traverses the tympanum, from within outward, in a groove, about on a level with the upper edge of the bony margin of the membrana tympani, and re-enters the bone close to the bony ring. Here the canal turns abruptly downward, traversing the bone parallel and close to the posterior margin of the membrana, to emerge in the angle between the mastoid apex

Digitized by Google

and the styloid process. Occasionally a skull is met with in which the bony auditory canal is directed very obliquely upwards and it is almost impossible to avoid the facial nerve if the opening is made perpendicular to the surface, in fact it will hardly enter the antrum at all.

It is necessary then to bear in mind the actual direction of the auditory canal in the particular case in question, and be sure to seek the antrum in a direction parallel to both the posterior and the superior walls of the bony aditus.

Facial paralysis may follow long continued suppuration in the tympanum even when the nerve is not injured in the operation, and the surgeon may long be in trouble and doubt as to whether he or Dame Nature was the cause of the distressing disability resulting.

In clearing the mastoid cells it is best to work from above downward close to the anterior border of the mastoid until the large pneumatic cell usually present in the apex is reached, then to work backward towards the posterior wall. In this way your work will be practically completed before the sinus is reached. Should you break into the sinus you can then pack immediately with the feeling that the operation is complete. The sinus wall is often very frail from caries, and gentle manipulation with the probe will sometimes break it down as happened to me in one case, causing perforation of the sinus. Should you break into the sinus before completing the operation, it is not always necessary to immediately abandon the operation, for, unless too large, the opening can be plugged with gauze, even crowding strips into the sinus itself, and the operation continued, removing the gauze just before finally packing.

The inner wall, if carious, need not be removed in all cases, but must be if any symptoms of intra-cranial complications exist. These complications are sinus thrombosis, meningitis, local or diffused, serous or purulent, and abscess of the brain itself. These may exist singly or may be combined.

Sinus thrombosis is indicated by a sudden chill and rapid rise of temperature often to 104o or 105o, followed usually,

Digitized by Google

although not always, by sweating. The temperature rapidly returns to normal or below, to be again followed by the same cycle of symptoms. The changes are frequently so rapid and brief that they may be overlooked if the temperature is not taken several times daily. There may or may not be much pain in the side effected and nausea and vomiting may also be present.

The symptoms are those of a pyaemia and are caused by the entrance by way of the internal jugular into the general circulation of the products of suppuration in the sinus. If emboli break away and enter the circulation they set up septic processes at the point of lodgment, commonly the lungs, causing septic pneumonia.

Meningitis from mastoid infection will be shown by the very severe headache with photophobia, and, if the inflammation be localized, points of extreme tenderness to pressure over the seat of greatest inflammation, particularly if the temporal lobe is involved. Vomiting is usually severe and constant, digestion and peristalsis are arrested, fermentation occurs in the stomach and bowels, the tongue is heavily coated and the breath very foul. The temperature remains steadily elevated, and the pulse is increased in rapidity and is usually weak. Paralysis of special nerves, commonly the third and sixth, is apt to occur, producing strabismus and ciliary paralysis. Rigidity of the neck muscles is apt to set in early, particularly if the lower lobes are involved, and it is sometimes necessary to distinguish this from the stiffness caused by pus burrowing under the deep muscles of the neck. The vision is frequently impaired in one or both sides, and the ophthalmoscope shows optic neuritis in differing degrees from congestion to complete choked disc.

With localized meningitis producing extra dural abscess the temperature usually does not go above 100°, the pain is localized to the region involved, and paralytic symptoms appear late if at all, while rigidity of the neck and vomiting are absent.

A rather rare complication of mastoid abscess is cerebral

Digitized by Google

abscess, which does not usually cause characteristic symptoms until some motor area is involved.

When a patient with mastoid abscess has a diminution of acute pain which is changed into constant headache, temperature falling to normal or below, and there is continually increasing mental hebetude with progressive failure of strength and accompanied by emaciation, we should suspect this complication.

In private practice it is very awkward to have a patient, after operation for mastoid abscess, doing well for two to six weeks, and suddenly developing symptoms of cranial abscess, meningitis and thrombosis, and it is therefore well to acquaint the patient and his friends with the liability of this happening, that they may be prepared for a second operation should this become necessary. If this has not been done it is often difficult to persuade the persons interested of the necessity of such measures in time to be of any use to the patient.

Should thrombosis develop in the lateral sinus, it may be reached by extending the opening made in the bone for the mastoid abscess, first turning down a flap of the soft tissues from an incision curved upward, extending from the top of the ear to the occipital protuberance, then vertically downward to the level of the mastoid tip. Forward the incision is carried to the zygoma and the soft tissues, except the periosteum, may be then turned down, leaving exposed the regions of the skull to be perforated for the exploration of the temporal lobe, the lateral sinus and the cerebellum. The flap thus formed has the vessels for its nutrition entering from below so there is no danger of sloughing; the muscles are divided in their axis and their functions not interfered with, while, if such extensive exploration as the three regions in question is necessary, the work is greatly shortened by making the flap in the beginning.

If the opening in the bone is extended backward to the occipito-temporal suture sufficient space will be obtained for exploration of the lateral sinus.

The sinus may be found plugged with a hard clot and the sinus will then feel to the finger like a round cord under the

Digitized by Google

dura. If not detected in this way a sterilized hypodermic needle may be inserted directly into the vein. If fluid blood is withdrawn you are at one assured of the absence of thombosis.

If, however, clot is found, the sinus is to be freely laid open and the clot turned out, using the curette delicately and persisting in removing all possible, until quite free hemorrhage occurs. The cavity is then packed with iodoform gauze. If the clot has extended down the internal jugular vein, as shown by great tenderness and a cord-like swelling over the course of the vein, it should be cut down upon, isolated and cut between two ligatures and the upper part emptied as the sinus was. If any large venous trunks are encountered they should also be tied off, thus isolating the focus of infection from the general system.

The location of extra dural pus is often a matter of conjecture and it is well to remember that it occurs most frequently in the posterior fossa and less often in the middle fossa. To explore the posterior fossa remove the inner table at the site of the mastoid operation, until sufficient of the dura is exposed.

Then with a probe delicately explore the space between the dura and the skull in every direction. Failing in locating pus at this point the middle fossa may be explored by making a horseshoe flap of the soft tissues, commencing at the top of the meatus upward, forward and downward to the zygoma. Elevate the soft parts and perforate one inch above the opening of the meatus with either the trephine or gouge or chisel, as preferred. Exploration can be made with the probe over the entire tympanic roof, from the base to the apex of the petrous bone.

If pus is found in either locality wash well and then drain with strips of gauze, allowing the cavity to close by granulation.

Unless there are localizing symptoms to indicate the site of a cerebral abscess, search for it is apt to be an uncertain matter. The best point for trephining for this purpose is one and a quarter inches behind the meatus and the same distance

Digitized by Google

above the plane of a line from the inferior angle of the orbit through the center of the meatus. From this point the temporo-sphenoidal lobe and the posterior cerebral can be reached together with the neighboring dura. Before turning the flap, the point for entrance of the trephine should be marked by a puncture with a strong scalpel or small drill. If pus is not found with the probe extra dural, the dura should be perforated with care to avoid the larger venous trunks, as hemorrhage obscures further exploration.

The surface of the brain under the dura mater should be examined with the probe, and failing to find pus, the brain substance is next to be explored with a large aspirating needle attached to a hypodermic syringe. As soon as the point of the needle is within the brain the piston is partly withdrawn and the needle advanced slowly so that thin walled pus cavities shall not be missed. The pus is often too thick to enter the aspirating needle in which case a common grooved needle will do as well. Should pus be found the brain substance is freely incised to give it exit.

If the ventricle is entered in the search for pus, the syringe will fill with the ventricular fluid or an abscess may communicate with the ventricle and pus will be mixed with the fluid.

When pus is discovered, drainage is to be obtained with fine strips of gauze, having first freely incised the brain substance. To explore the cerebellum the trephine should enter an inch and a half behind the center of the meatus and a quarter of an inch below its horizontal plane, and search be made for pus in the same manner as before.

The third variety of complications, in mastoid abscess, is abscess of the neck. In a recent article by Ferrari, of Rome, the claim is made that the pus germs are distributed mainly through the venous channels, and he divides neck abscesses into three varieties; the superficial, intermuscular and skeletal. Superficial abscesses are produced by direct burrowing of pus through the bone externally, producing sub-periosteal abscess or abscess of the cellular tissue overlying, or of the insertion of the sterno-cleido-mastoid muscle. In some cases

Digitized by Google

the pus makes its exit through the Glasserian fissure, causing pus collections in the partoid gland or under it.

The deeper interstitial or skeletal abscesses are produced by the pus making its way out by the squamo-mastoid or the occipito-mastoid sutures; the Glasserian fissure or the emissary vein of the mastoid prominence. Again the pus in sinus thrombosis may follow the internal jugular vein and cause abscess in the course of that vein or it may even perforate the canal of the internal carotid and burrow in the sheath of that artery, the internal jugular and the pneumo-gastric nerve. When the abscess is superficial, evacuation and cure are easy. If in the deeper parts of the posterior triangles of the neck, the regional anatomy is comparatively simple, but the incisions will need to be very deep. In one of my cases an opening was made just below the apex of the mastoid and another opposite the seventh cervical vertebra to the depth of a finger-length and a drainage tube passed between the two.

In case the pus burrows anteriorly the case is different, and the incision needs to be made with great care, to avoid injuring important structures.

The patient should have general anaesthesia and a good sized opening, at least two inches in length, made parallel to the sterno-cleido-mastoid anteriorly. The fascia is divided on a grooved director and the parts separated with the handle of the scalpel or the finger. In this way you can safely penetrate even to and behind the œsophagus.

In case the pus is in the internal jugular vein, or the vein is thrombosed above, you may find instead of a round cord-like swelling that the vein is collapsed and matted to the sheath. It may not be possible to separate the vein to tie it off, but an incision may be made into it and a drainage tube placed alongside, through which the pus will drain. In one of my recent cases this condition was found and the next morning a few drops of very stiff pus had come from the tube, the soreness and swelling had diminished above, and the patient made a good recovery.

Digitized by Google

SECTION ON SURGERY AND GYNECOLOGY.

OFFICERS.

Chairman—H. B. OSBORNE, Kalamazoo.
Secretary—WILLIAM F. METCALF, Detroit.
Orator—WALTER P. MANTON, Detroit.

SECRETARY'S MINUTES.

FIRST DAY, THURSDAY, MAY 4th.

2 O'CLOCK P. M.

The section was called to order by the chairman. The following papers were read and discussed:

I. Puerperal Sepsis.
   (*a*) Symptomatology, Joseph B. Whinery, Grand Rapids.
   (*b*) Medical Treatment with Especial Reference to Serum Therapy, Howard W. Longyear, Detroit.
   (*c*) Surgical Treatment, A. W. Alvord, Battle Creek.

II. Excerpts from Records of Gynecological Cases, James N. Martin, Ann Arbor.

III. The Technique of Alexander's Operation, Eugene Boise, Grand Rapids.

The election of officers for the section for the ensuing year resulted as follows:

Chairman—O. H. CLARK, Kalamazoo.
Secretary—CHRISTINE ANDERSON, Detroit.
Orator—EUGENE BOISE, Grand Rapids.

Adjourned.

WILLIAM F. METCALF,
Secretary.

Digitized by Google

SYMPTOMATOLOGY OF PUERPERAL SEPSIS.

DR. J. B. WHINERY,
Grand Rapids.

Although lhe pathology of sepsis in general is still in its infancy we should try to have as clear an understanding as to the cause of puerperal sepsis as possible.

The time is past when the intelligent physician can delude himself with the idea that his patient has "caught cold" and as a result has a fever, or that it is due to an indiscretion of diet or possibly malaria. Before touching on the symptomatology of puerperal sepsis it may not be out of place to refer briefly to the origin of the trouble.

The cause of puerperal sepsis is identical to that of septic infection from any source. It is simply a wound infection dependent upon the entrance of new organisms or toxic products into the living tissues. The septic condition may be either localized or general, an intoxication or an infection. The terms used to express these different conditions are sapræmia, so called, septicæmia and pyæmia. The term sapræmia has been used to designate the toxic condition following the absorbtion of the products of putrescent matter from some focus, the putrefactive bacteria themselves not gaining entrance into the tissues. But it has been found that all pathogenic organisms are capable of producing toxic substances of one kind or another, which are injurious to life. The by-products of putrefactive bacteria closely resemble in poisonous qualities those of the pathogenic bacteria, but in locally infected wounds the former are rarely met with, while the latter are uniformly present. This forces us to ascribe the symptoms frequently attributed to putrefactive intoxication to the ab-

Digitized by Google

sorbtion of toxines elaborated by the more common pyogenic organisms. For this reason intoxication or septic intoxication is a better term to use than sapræmia.

In septicæmia there is not only a local source of infection but a general invasion of the system by the germs and their toxines. Pyæmia is also a general infection characterized by the formation of metastatic abscesses in various parts of the body distant from the point of infection. These foci of suppuration are caused by the lodgment of masses of bacteria or infected emboli which have gained entrance into the circulation. As an immediate result of labor there are always wounded surfaces of a genital tract which offer to pathogenic bacteria most favorable soil for development. The following organisms have been described as occurring in and as factors in the production of puerperal sepsis: streptococcus pyogenes, staphylococcus (aureus and albus), bacillus coli communis, gonococcus, bacillus of Tetanus, diphtheria bacillus, diplococcus pneumonia, bacillus proteus, bacillus areogenes capsulatus, bacillus of Lindenthal and typhoid bacillus, which seems to prove that septic infection may be caused by many different types of bacteria, although the streptococcus and staphylococcus are the organisms most commonly met with in puerperal infection, and at present it is a question whether the term puerperal infection, strictly speaking, should not be applied to streptococcic and stapoylococcic infection only. These germs are introduced into the genital tract just before, during or within a short time after delivery with but rare exceptions. When in a healthy condition the parturient canal may be safely assumed to be free from germs of a virulent character and granting this we must trace the infection to ineffectual antisepsis or lack of precaution on the part of the attendants, or, as frequently happens, the trouble can be traced to decomposing blood clots or retained portions of placenta or membranes which have become infected from without.

Williams, of Baltimore, has done as much if not more work on bacteria of the vaginal secretion than any other investigator in this country. In summing up his work he concludes that the vaginal secretion of the pregnant woman does

Digitized by Google

not contain the usual pyogenic bacteria which give rise to puerperal infection. This freedom from pathogenic germs is explained by the bactericidal action of the normal vaginal secretion. As the vagina does not contain pyogenic germs autoinfection with them is impossible. The gonococcus is occasionally found in the vaginal secretion, and during the puerperium may extend from the cervix into the uterus and tubes. It is possible, but not yet demonstrated, that in very rare instances the vagina may contain bacteria which may give rise to sapraemia and putrefactive endometritis by autoinfection. His work demonstrates also the danger of vaginal examinations. He has shown that the introduction of a small cyclindrical speculum no larger than two fingers carries with it up into the vagina in fifty per cent of the cases, whatever pathogenic organisms may be present at the vaginal entrance. On account of the difficulty of thoroughly disinfecting the sensitive vulva with anything like the certainty with which we can disinfect our hands, it becomes apparent that the introduction of a perfectly sterile finger into the vagina is not always a harmless procedure.

According to Bumm's classification we may have (1) a localized septic endometritis, (2) thrombotic form of puerperal fever, (3) ordinary lymphatic form, (4) internal erysipelatous form. According to this writer there is present in septic endometritis a superficial layer of necrotic tissue invaded by putrefactive and pyogenic bacteria. Beneath this is a protective zone consisting of leucocytes and including the remains of membranes and part of the muscular coat, but not invaded by bacteria. The thrombotic form is a more severe development of the localized form and is accompanied by a general infection through the veins. There is with it a purulent phlebitis and a thrombosis at the site of the placenta. When these thrombi degenerate portions may be carried by the blood over the system. In the lymphatic form infection takes place through the lymphatics and a general infection results. Bacteria get into the open lymphatics and quickly spread. The internal erysipelatous variety is with difficulty distinguishable from the lymphatic form.

Digitized by Google

Many factors influence the symptomatology of puerperal sepsis. According to Welch the effects produced in the animal body by pyogenic cocci are determined by many factors relating to the infectious agent and to the individual exposed to infection. There are differences in these effects depending upon the species of the animal, upon the tissues and parts of the body infected, upon the readiness of absorption from the infected parts, upon the source, the number and the virulence of the organism, upon the nature and amount of toxic substances accompanying and produced by the bacteria, upon general predisposing condition of the body, and upon local conditions in a wound.

The above statements in regard to wound infection in general apply equally as well to puerperal sepsis. The clinical picture depends upon the degree of virulence of the toxines absorbed, upon the location of the affected area, upon the kind of bacteria present and their capability of existing and spreading in living tissues, and upon the resistance and antidotal powers possessed by the patient herself. The rapidity of systemic infection often depends to a considerable extent upon the richness of lymphatics at the focus of the trouble. An infected lacerated perineum or vagina is easier to control and systemic symptoms are of a much milder type than when the trouble starts from the cervix or uterus, where the lymphatic supply is rich.

An increase of temperature or of pulse rate alone should make one suspicious. The temperature is usually elevated, but may be normal and in rare cases subnormal. When the septic intoxication is severe a chill usually occurs at the commencement of the trouble. It may be on the third or fourth day after labor, and is followed by a rise in temperature, an increase in the pulse rate, and the usual febrile symptoms accompanying a septic process. With septic intoxication there is usually an offensive odor to the discharge due to decomposing retained secundines. The intensity of this intoxication depends upon the amount of absorption and the length of time the process is allowed to run without interference. This condition is less dangerous than a true general infection.

Digitized by Google

Putrid infection is not so grave as septic infection. Any local infection may become a general infection and putrid intoxication may result in death. If septic symptoms occur after the removal of retained tissues they may be due to a septic endometritis or to a retained discharge caused by some obstruction at the cervical outlet. If the infection penetrates deeper than the endometrium there may result many septic complications, a few of the commonest being metritis, cellulitis, peritonitis, lymphangitis and phlebitis.

Acute septicaemia in the great majority of cases originates in the uterus; the symptoms often appearing sooner after labor than those of septic intoxication. This form of sepsis is most frequently caused by the streptococcus. The lymphatics rapidly take up the bacteria or their toxins, and the system is soon overwhelmed by the poison. The temperature varies from subnormal to a high degree and the pulse is small and rapid. In this condition the pulse is the best criterion of the state of the patient. The condition of the lochial discharge may offer no guide as to the severity of the infection. In the most acute type the lochia may be entirely devoid of odor. An arrest of the lochial discharge is not due, as is commonly believed by the laity and some medical men, to catching cold, but is due to a diminished excretion, an accompaniment of infection, or to a stenosis of the cervical canal preventing its escape. Putrid intoxication is the most common of the different types of sepsis and is said to equal seventy-five per cent of all the cases of puerperal infection. A differential diagnosis between static intoxication and septicaemia may sometimes be made by a bacteriological examination of the blood. The presence of bacteria indicates septicaemia. In arriving at the diagnosis of puerperal sepsis one must first make a thorough physical examination and exclude other possible causes for the febrile condition. A rise in temperature may be due to a cracked nipple, mastitis or to autointoxication as a result of constipation. Malarial complication during the puerperium is not common and the differential diagnosis between malaria and sepsis is important, as it often happens that an intermittent febrile condition is

Digitized by Google

diagnosed as malaria when in reality it is a septic process. A certain differential diagnosis can always be made by finding the malarial parasite in the blood or by the marked leucocytosis, which is always present in septic conditions. Typhoid fever when occurring during the puerperium is usually modified and may be diagnosed by the presence of rose spots, the application of the Widal test, the Diazo reaction, and the absence of a septic leucocytosis. In obscure cases of septic infection the examination of the blood may be the only method of clearing up the diagnosis. If pyogenic organisms are found the result is positive, on the other hand negative results do not exclude the possibility of septic trouble. Blood for such an examination must be taken directly from the veins and in considerable quantity. It has been found that pyogenic bacteria invade the general circulation in rather small proportions even in severe cases, and as a rule late in the disease. Undoubtedly absorption of toxines is the most important feature in cases of sepsis.

The value of blood cultures during life from a standpoint of diagnosis is therefore somewhat limited because the microbes are so infrequently demonstrable. More definite knowledge can be obtained from a clinical examination of the blood elements. In well marked cases of sepsis there is a diminution of red cells. This diminution may be very marked and appear in a very short time. The greater the anaemia the graver the prognosis. The haemoglobin is diminished in proportion to the number of red cells. In cases of moderate severity there is a marked leucocytosis. In mild or in very rapid and severe cases leucocytosis is slight or absent. This is due to the fact that in mild cases the intoxication is not sufficient to stimulate a leucocytosis, while in severe cases the patient is killed by the toxines before the hematogenic function becomes operative. The leucocytosis which normally occurs after labor is not nearly so marked as that which follows septic trouble. In closing it may not be out of place to emphasize a few points in regard to prophylaxis. Asepsis and not antisepsis should be the aim of the obstetrician. Knowing that the normal vaginal secretion is

Digitized by Google

free from pathogenic germs we should try to prevent the entrance of these organisms from without. The vulvar outlet is quite frequently the source from which these germs are spread, and on account of this risk of infection vaginal examinations should be few in number. With thorough cleansing of the vulvu and hands, vaginal examinations are relatively harmless. The future limitation of puerperal sepsis will depend upon the thoroughness of the aseptic measures employed by the obstetrician.

Digitized by Google

THE MEDICAL TREATMENT OF PUERPERAL INFECTION, WITH ESPECIAL REFERENCE TO SERUM THERAPY.

H. W. LONGYEAR, M. D.,
Detroit.

During the last year a number of articles on the subject of serum therapy have appeared in the medical journals of this country and Europe, showing a far greater interest in the subject than has been evinced in previous years. The evidence as shown in them appears to be more or less contradictory in character which is apparently due to a variety of causes, such as imperfect diagnoses, mixed infections, late instigation of treatment, worthless serums, too infrequent use of the remedy, etc. The testimony is, however, on the whole encouraging and points toward ultimate success. The rapid advance in the science of bacteriology will doubtless in the near future reach and solve some of the problems that are now causing this new therapeutic field to lack the attractiveness of absolute success.

As any case of puerperal infection may be due to the action of one or more of a number of definite toxic agencies, the treatment must of necessity be of a specific character and used understandingly, applying the suitable remedy where possible to each variety of the disease. This being the case, exact diagnosis, usually by the use of the culture tube and microscope, is a necessity for the thoroughly scientific treatment of this disease. Bacteriologic examination alone can determine with precision the variety of infection in any given case.

Digitized by Google

As illustrating the value of such examinations and the varieties of infection that are liable to cause puerperal pyrexia, a report of Dr. J. W. Williams, of Johns-Hopkins University, (American Journal of Obstetrics, September, 1898), is of interest. In a total of forty-four cases in which fever was present there were found streptococci in 8; staphylococci in 3; colon bacilli in 6; gonococci in 2; anaerobic bacteria in 4; unidentified aerobic bacteria in 3; bacteria in cover glass, but cultures sterile, in 4; diphtheria bacilli in 1; gas bacilli in 1; typhoid bacilli in 1; cover glass, cultures, and blood sterile in 11; cover glass and cultures sterile, with malarial plasmodia in blood, 1. Several of the cases were infected with more than one of the varieties.

In referring to the eleven cases in which the examination was negative, the writer says: "How great a gain this is can only be appreciated by those who have experienced the immense relief of finding that the uterus is absolutely sterile in a patient whose temperature has suddenly shot up to 103 degrees to 104 degrees on the third or fourth day of the puerperium, and in whom we suspect the possibility of an infection."

Think also of these eleven cases being curetted and douched and heroically medicated on the shotgun principle, as too often occurs in the treatment of these cases.

In September, 1896, at the meeting of the American Association of Obstetricians and Gynecologists, I read a paper on "Puerperal Infection," in which I reported a case of puerperal diphtheretic infection in which the diagnosis was made by bacteriologic examination, and the case successfully treated with diphtheria antitoxin serum.

I also reported six cases of puerperal diphtheria at the meeting of the same association in August, 1897, in all of which bacteriologic examinations were made, four of them being pure Klebs-Loeffler and two Klebs-Loeffler and streptococcus.

Since then I have had the opportunity of examining six cases, two of which proved to be pure streptococcus, two

Digitized by Google

streptococcus and staphylococcus, and two pure staphylococcus.

I have also seen one case, where I was called in consultation after the patient was comatose, which gave a history of having fatally infected the infant with erysipelas and an attendant with the same disease, and yet the patient had been treated with diphtheria antitoxin serum, without any bacteriologic examination having been made.

In another case, which I reported among the group of six cases of puerperal diphtheria, before mentioned, the mistake of applying the wrong treatment because of an error in diagnosis was made. The patient, when I saw her in the evening, had had several very violent rigors and temperature was high. A culture was made, and judging from the violence of the symptoms, that it was a streptococcic infection, and desiring to give the patient the benefit of treatment before the report on the culture could be made, the streptococcic antitoxin serum was immediately used. On the day following, just as the report came that the culture showed pure Klebs-Loeffler bacilli, the patient was seized with a violent chill and died soon after.

Many more citations of a similar character could be made, but these are sufficient to illustrate the point and show the advantage of exact diagnosis in the treatment of puerperal infection.

Dr. Williams' report shows that not only can puerperal pyrexia be produced by a number of known agencies, but that fever may occur from causes outside of the genital tract, which is not due to either malaria or mastitis. Such cases are very likely due to infection from the alimentary canal and can be usually cured by thoroughly unloading and disinfecting the bowels.

The reports from various sources all prove, as the cases cited show, that the streptococcus is not so prevalent as a causative factor in puerperal infection as it has been the custom of late to believe. This belief has doubtless led to some of the disappointments in the use of the antistreptococcic serum. I believe, also, that, judging by the results obtained

Digitized by Google

from the use of the antidiphtheritic serum, we are expecting too much from the antistreptococcic serum. While some reports show that the latter does sometimes act as positively in reducing temperature and pulse, and causing a rapid subsidence of all symptoms, as does the antidiphtheritic serum, yet in others which show no immediate subsidence of symptoms at first, its continued use, I am beginning to believe, may so fortify the system as to prevent the general systemic infection which usually causes the fatal termination of these cases, and leaves only the local and less dangerous sequelae to be dealt with. While writing this paper this phase of the serum treatment I believe was illustrated in a case of streptococcic infection that I have seen several times in consultation with Dr. Geo. E. Ranney, of Lansing.

The case was a primipara in which there had been a slight laceration of the perineum inside the fourchette, forming a pocket, which was the starting point of the infection. The form of infection was found by culture to be pure streptococcic, and its source was quite conclusively proven to us to have been tonsilitis, as the nurse who cared for the patient had just recovered from the disease, which she contracted from a number of cases in one family which she had been nursing.

I saw her on the fifth day after confinement. Her temperature was 104° and had been nearly that for 48 hours. A thick white membrane covered the surface of the perineal laceration and other abrasions of the vaginal wall. The cervix had not been lacerated and there was no membrane upon it. The lochia had ceased but there was no tenderness or undue enlargement of the uterus. Goodell's iodine, carbolic acid and chloral mixture was injected into the uterus and applied to the membrane where found in the vagina and the nurse instructed to use the peroxide of hydrogen, by vaginal injection, two drachms every two hours during the night. Nuclein solution and quinine were prescribed. The next morning the temperature was normal and remained so until toward evening, when it began to rise, and increased steadily until noon of the eighth day, when it registered 103°. I saw her again at that time and found the membrane nearly gone from the

Digitized by Google

vaginal abrasions, but a new growth of it had formed on the cervix, which completely encircled the os and passed up into the cervical canal. The uterus was much larger than at my previous visit, and was apparently thoroughly infected. The only applications made since my last visit had been by the use of the peroxide of hydrogen and hot douches. The iodine mixture was again thoroughly applied inside the uterus and to the vaginal abrasions, the douche used, and the vagina loosely packed with iodoform gauze, and these applications Dr. Ranney continued to use twice daily afterwards. As the positive diagnosis of streptococcus had then been made, the use of the serum was begun, 10 c. c. being used hypodermatically every twelve hours until three doses were given. The use of nuclein solution and quinine was continued until the thirteenth day, with the patient constantly improving, and as the membrane had ceased to form, the gauze packing in the vagina was discontinued and more frequent douches used, the nurse using the vaginal irrigation every three hours and Dr. Ranney the intra-uterine three times a day. At this time the uterus was small and well contracted and all abrasions appeared healthy and free from membrane, but an exudate had developed in the left broad ligament, and this had caused an exacerbation of temperature. The patient had had nine doses of antitoxine, and as the membrane had ceased to appear it was decided to discontinue its use. I saw the patient for the last time yesterday afternoon, when, with the assistance of Dr. Jennings, of Detroit, we anaesthetized her and made a careful examination of the adnexa with the view of operation, if pus was found. The mass was free from fluctuation and had not enlarged for several days, so no operation was attempted. The general condition of the patient has been excellent throughout this attack, her appetite remaining good and her tongue clear. She is in excellent spirits, has no pain excepting after examination. Has had no symptoms whatever of systemic infection, having had no chills or sweating. Her temperature for the last three days has ranged lower, showing a minimum of 98.5° and a maximum of 102.5°.

Digitized by Google

It was noted that the reproduction of the membrane was not prevented by the use of the serum, as a discontinuance of the iodine mixture application was followed by its reappearance. This may be a noteworthy fact as taken in connection with the absence of symptoms of systemic infection, it may indicate one of the limitations of the remedy, while the absence of pus and of systemic infection may indicate its true and only value. It certainly does not act in the same manner as the diphtheria antitoxine serum, but if we find that patients so virulently infected as this one was, recover under its use, while others under the usual forms of treatment, without its use, almost all die, there must be virtue in it, and time, with close observation of symptoms when it is used will demonstrate other minor points which will give the remedy a more scientific value.

Thus far there are but two available serums that can be used in the treatment of puerperal infection, viz: the antistreptococcic and the antidiphthertic. Neither of these is of any value in the treatment of the disease if due to any other infection than the one that it is made to combat. The antidiphtheritic serum if properly made and preserved is quite uniform in its action and may be as confidently depended on to cure puerperal diphtheria as it is when used for the disease where the membrane is found in the air passages.

I have used it successfully in six cases in which the diagnosis was verified by bacteriologic examination, and with equal success in two cases supposed to be diphtheritic in which no bacteriologic diagnosis had been made.

Unfortunately the experience with the antistreptococcic serum is not so happily uniform in its beneficial action, even in cases of pure streptococcic infection. In some cases it works as positively as does the antidiphtheretic serum, while in others, without any known cause, the serum being the same and the cultures apparently the same, no results are obtained. Various conjectural causes have been advanced for this variation. One is that there are different varieties of streptococci which are affected differently by the serum. Another is that the action of the streptococci pro-

Digitized by Google

duce changes in the fluids and tissues of the body after a certain time that tend to annul the action of the serum. Both theories seem reasonable. There is certainly often a great difference in the activity of different cultures of streptococci. In one case which I saw in consultation with Dr. Wellings, of Detroit, the woman had had fever for several weeks, and when I saw her the thermometer registered a temperature of 107 degrees F., the culture showed a remarkably slow growth of pure streptococci, and the case was quickly cured by one thorough application to the endometrium of Goodell's endometritis mixture of iodine, carbolic acid and chloral. In this case no secondary foci had formed anywhere in the body, and the fever was apparently due solely to the toxines which were being manufactured by the one source of supply in the uterine cavity, which being destroyed the system rapidly eliminated the toxines.

In another case which I saw with Dr. B. R. Hoyt, a case of mixed diphtheria and streptococcus infection, the diphtheritic element was quickly subdued with the antidiphtheritic serum, while the streptococcus, having invaded the veins of the legs and caused suppurative phlebitis, was apparently not affected by the antistreptococcic serum.

On the other hand, a case which I recently treated in Harper Hospital illustrated the efficacy of the serum, when no secondary foci existed, although used late in the disease. It was a case of phlebitis, six weeks after confinement, high daily temperature for three days after admission, swelling of right leg, complete rupture of perineum, uterus normal. Streptococci developed in cultures of pus taken from inside vagina. Three doses of the antistreptococcic serum, used 18 hours apart reduced the fever, and the swelling of the leg rapidly subsided. In this case no suppurative secondary foci had developed and the serum acted with great promptness.

In some of the cases of streptococcus infection it would thus seem to be of the utmost importance to use the serum as early as possible in the disease. It should also be used more frequently than is necessary in the use of the antidiphtheritic serum.

Digitized by Google

My experience and observation would indicate that the best results are to be obtained by injecting, hypodermically, 10 c. c. once in from 12 to 18 hours. Three doses thus used will usually demonstrate its applicability to the case, and it then can be used according to the indications shown by temperature and pulse. Relapses are very liable to occur with streptococcic infection, which necessitates careful observation of cases which are apparently recovering, so that treatment may be renewed at the earliest indication of a new onslaught of the disease.

There have been a few cases reported in which the serum was thought to have acted unfavorably, but the proof in no report that I have seen has clearly demonstrated this. In one case the serum was used when the patient was almost moribund, and as a last resort, while in others the kind of serum used and manner of giving it were not stated, so that the probability is that the fault was not with the serum unless it had been allowed to spoil. I have known of a feeling of depression to follow its use, but have observed no serious symptoms that could be attributed to it.

In case of mixed Klebs-Loeffler and streptococci I first use the antidiphtheritic serum, as it does its work more surely and rapidly, then follow with the antistreptococcic.

We know little as to the modus operandi of serum therapy. If the benificial effect is due to a stimulating effect on the white blood corpuscles, then one serum should be useful for more than its own kind of infection, but such is found not to be the case.

In an article on "Serum Treatment of Streptococcic Infection," by Dr. E. W. Saunders, in the January, 1899, Journal of Obstetrics, he says regarding this phase of the subject:

"The exact properties of this serum are only partially determined. It has no antitoxic potency, and its favorable effects have been ascribed to certain antibodies or alexins, that is, certain definite germicidal compounds. But Bordet has clearly shown that this serum has no more germicidal properties than normal serum. He maintains that its principal value lies in its power to stimulate phagocytosis. Italian

Digitized by Google

bacteriologists, however, hold that besides its stimulation of phagocytes it also renders the plasma capable of paralyzing more or less the micrococci. As the medicinal serum per se does not affect these microbes, we must conclude that its whole action is a stimulation of the leucocytes. Van de Veld has proved that alexins are secreted by the white blood corpuscles, and this bactericidal substance must be formed in increased quantities under the stimulation of the serum. Therefore, as we know, the antistreptococcic serum stimulates the leucocytes, and as a result we have more active phagocytosis and increased alexin formation. We have no definite knowledge of any other action. The specificity of this power is still undecided. We know that leucocytes become more potent toward streptococci, but whether other bacteria may also be influenced by this stimulation is an undecided question. Clinical evidence seems to be against the assumption that antistreptococcic serum acts favorably in other directions. For the present reliance can safely be placed only on its specific activity against the streptococcus. This specific action manifests itself against the streptococcus pyogenes (Rossbach) and the streptococcus erysipelatis (Fehleisen), the identity of which is firmly established. Bullbach, however, has demonstrated that an animal immunized to the streptococcus erysipelatis is also immune to the pus producing streptococcus. From biological investigation the conclusion is justifiable that this serum would be valuable in all the clinical forms of septicemia produced by the streptococcus."

Constitutional medication, as well as the treatment of the local source of infection, should be actively used along with the serum treatment. Nuclein and protonuclein, whiskey, quinine and strychnine are all remedies of value and should be used, the three latter as indicated and the nuclein in all cases.

Just how much benefit is derived from the nuclein it is difficult to estimate, but theoretically its administration is correct, and the phagocytes should have the benefit of the theory. I feel certain that the remedy has assisted quite materially in curing some of my cases. I usually use the

Digitized by Google

nuclein solution for oral administration prepared by Parke, Davis & Co., one-half drachm every two or three hours given in water on an empty stomach. I prefer giving the quinine in doses of from ten to fifteen grains, twice daily, rather than in small doses at short intervals, as I believe it has a more positive effect on the toxines in the system when given in this way.

The local treatment should be instituted only after a careful examination has determined the seat of infection, as it is only in this way that intelligent therapeusis can be applied. The primary seat of infection is not always inside the uterus, but in many cases will be found in abrasions of the vaginal mucous membrane, pockets formed by lacerations of the vaginal wall, ruptured perenium or lacerated cervix. The surfaces of such injuries should be carefully dried and a powerful antiseptic applied to them, and the agent should be such as will act quickly on septic material, membranous exudates, etc., without having the power to destroy the basic zone of granulations which are forming to act as a barrier against the entrance of the toxines into the system. Such an agent I have found in Goodell's endometritis mixture, composed of pure iodine, one part, carbolic acid and chloral, of each two parts. It is my custom to apply this to all infected parts once or twice daily, and have the nurse inject about two drachms of the peroxide of hydrogen into the vagina every two hours night and day. If the infection has invaded the uterus the cavity is carefully washed out with the double canula, using any antiseptic solution, dried with cotton on an applicator, then, by means of the glass injection tube, the same carbolic chloral and iodine mixture is passed up to the fundus, about a drachm being used. This is then applied to all parts of the uterine cavity by the use of the applicator, or forceps, with cotton. The curette should be used with great caution, and never used except to remove pieces of retained placenta, membranes or other foreign material, as in the ordinary case of infection its action is simply to promote absorption by removing the granulations which nature is throwing up as a breastwork against the invasion of the enemy.

Digitized by Google

The varieties of infection which are unattended with the formation of a pseudomembrane, such as gonorrhoea, putrefaction and pus-forming bacteria, can with benefit be treated with the intrauterine application of the iodine mixture once a day for three or four days, but in these cases the intrauterine douche with permanganate of potash solution, two grains to the ounce, or other as efficacious, non-irritating and non-toxic agent, should be also freely used as often as from two to four times in twenty-four hours, the solution as hot as can be borne.

In case of infection, a ruptured perineum which has been repaired, should be inspected frequently, and if the edges of the wound appear infected the stitches should be removed and the wound carefully disinfected and the open method used.

The drainage of the uterus should be free, and if it is not, it should be made so by the use of a drainage tube.

When abrasions and lacerations of the vaginal wall prove to be the seat of infection, instead of using the peroxide of hydrogen the vagina may be loosely packed with iodoform gauze, after each application, in such a manner as to prevent the opposing sides coming in contact.

The local treatment of all forms of infection may be summed up in one sentence of two words, viz: *Thorough disinfection;* and in connection with this I desire to make one point very emphatic, and that is that the use of douches alone is not sufficient in cases in which a pseudo-membrane is present. The membrane in some of these cases is very thick and the agent used in the water can not be made sufficiently powerful to penetrate it, and the consequence is the growth continues beneath the membrane with unabated rapidity. This development and redevelopment, when destroyed, of this exudate should be as closely observed and as thoroughly, and also as gently, treated as though it were in the throat of the patient, as its early and continued destruction is of the greatest importance in gaining and retaining control of the disease.

The hot vaginal douche is useful in reducing the inflammation and attending oedema, removing fluid exudates and de-

Digitized by Google

bris, and is very grateful to the patient. It should be used freely by the attendant if capable of doing it properly. If not the doctor will best attend to that himself, using it before each treatment, or oftener if necessary.

The general practitioner, situated in the country, far from the sources of supply of culture tubes, expert pathologists, etc., will probably ask of what use is all this scientific diagnosis to him? The knowledge of these things will probably be of much use to him, even if he has not the facilities for making a bacteriologic diagnosis. In a small community the presence of infectious diseases is usually well-known to every one, so that in a case of puerperal infection a diagnosis, often by exclusion, can be fairly well arrived at. Erysipelas, scarlet fever and even tonsillitis, may be the sources of streptococcus infection, while diphtheria—including membranous croup—may be the cause of diphtheria occurring in the genital tract. Both forms of infection produce a white pseudo-membrane which will be found covering the abrasions or lacerations in the vaginal wall or cervix. Pure streptococcic infection is productive of no odor in the discharge from the infected parts so that unless mixed with the more benign bacteria of decomposition this popular sign of infection will be entirely lacking in this most virulent of puerperal infections. The diphtheritic infection may also be free from odor until sloughing of the affected areas occurs.

The staphylococcus also produces a white pseudo-membrane which resembles that produced by the streptococcus and the Klebs-Loeffler bacillus, and as the staphylococcus is a common habitat of the epidermis, infection from this source is the most likely if it occur in a community which is free from the streptococci breeding diseases.

The bacillus coli communis produces no membranous exudate. Its presence is attended with suppression of lochia, purulent discharge and the early occurrence of serious constitutional symptoms.

Gonorrhoeal infection is attended with no membrane, but causes suppression of the lochia when the uterus is invaded while the characteristic constitutional symptoms of infection

Digitized by Google

are not violent. If the Fallopian tubes are invaded peritonitis may result, which is usually local in character, but may be general. The history of the case will usually corroborate the diagnosis, as a purulent discharge will usually have been present before confinement.

SUMMARY.

Local treatment:

Early recognition and destruction of pseudo-membrane by topical applications is of great importance. Iodine, carbolic acid and chloral mixture a safe and efficient application for this purpose.

The intra-uterine douche, frequently applied, of most value in the forms of infection unattended by the formation of a pseudo-membrane, but useful also in connection with local applications.

The vaginal use of the peroxide of hydrogen, useful in all forms of infection. Frequent packing of vagina, previously dried, with iodoform gauze is especially useful in cases attended with pseudo-membrane.

Inspect infected cases daily, with the speculum. Some uncomfortable surprises may thus be avoided, and the local treatment will be made understandingly.

General Medication:

Quinine in large doses twice daily; whiskey and strychnine to support heart, if indicated; nuclein and protonuclein in all cases; mercurial and saline carthartics at first in all cases, then as indicated.

Serum therapy to be applied in all cases where the Klebs-Loeffler bacillus or the streptococcus can be demonstrated by bacteriologic examination to be present, and also in all other cases when such examination has not been made, but in which these varieties of infection are probably present. Streptococcus antitoxine serum to be used persistently to prevent symptoms of systemic infection and formation of pus, even if local symptoms and high temperature persist.

Digitized by Google

SURGICAL TREATMENT OF PUERPERAL SEPSIS.

A. W. ALVORD, M. D.
Battle Creek.

I was asked a few days since by your chairman to write a short paper on the treatment of puerperal sepsis. To do this is much more difficult than to write a longer article, for to condense and still be explicit is the highest art in literature. This article will therefore be exceedingly limited in its scope, having nothing to do with causation or medical treatment.

When the surgeon places himself vis-a-vis with a case of puerpural septicæmia he has reached a moment in his existance of grave importance. A human life is resting on his his hands. Upon his decision and action will probably depend the issues of that life. Given a typical case without complication and his path is plain before him, though full of danger. It is his first duty to remove from the cavity of the uterus all debris that can serve as a nidus for the streptococci. It may be that a little of the secundines have been left behind, perhaps so caught between the contracting villi, that material force must be used to release it. Possibly a decomposing blood clot furnishes the nidus for septic poisoning; whatever of foreign body remains within the uterus must be removed. How? Some will tell you with a sharp, some with a dull curette. Each one must decide this point for himself. But either will do the business successfully, if skillfully used. Every half inch of surface must be scraped by the curette. But what is of great importance is a thorough washing out of the uterus at the time of curettement. An excellent instrument has been devised, having a hollow handle, through which a stream of

Digitized by Google

antiseptic fluid is kept passing, during the operation. But this instrument is not necessary to perfect work. The ordinary bag syringe, filled with a weak solution of boric acid, creolin or Formaldehyde, frequently used during and after the operation will get the same results. An anesthetic will be necessary to thorough work, both for relief of the nervous system, which is frequently a cause for complications, and that with skilled hands you may feel the muscular coat after the endometrium has been removed, and not go through it. This operation if thoroughly done, will not need to be repeated, when the case has been seen early, but irrigation of the womb with a syringe nozzle, having a free return flow, should be used three or four times daily, employing some efficient antiseptic in the water, which should be used in generous quantities and hot as can be borne comfortably. Forcible dilatation is usually necessary before the operation, to secure free outward flow for all fluids. At the close of the operation it is wise to pass two or three strips of iodoform gauze up into the fundus of the womb, allowing the ends to remain outside the vulva to act as a drain. Now put your patient to bed, amid perfect quiet, and the temperature will subside, the pulse lessen its frequency, the stomach and nervous system will react, and your patient will soon be out of danger. But where complications have unfortunately arisen before this relief was brought to the patient, the path of duty will not be so plain. It is now generally conceded that erysipelas, puerperal fever and most septicæmias are due to the action of streptococci of the same or similar species. Marmorek has succeeded in producing a serum intended to antidote this form of microbe. It's use both in this country and in Europe has proved quite successful and leads us to hope much from it. Marmorek's anti-streptococcic serum is used in doses from 5 to 40 c. c.

But some day you will hit upon a case, where, having done all these things, together with appropriate medical treatment, you will stand aghast at their inefficiency and ask yourself "Is there nothing else I can do?" "Must this woman die?" Mayhap you have been called late into a case, where medical treatment alone has been relied upon. The uterus, now filled

Digitized by Google

with a seething, fermenting mass of debris, is now terribly inflamed, discharging a foul, sanious fluid. The ovaries and tubes and possibly the broad ligaments and peritoneum have become involved; the pulse is weak, rapid and thready. You realize that if you keep the uterus and appendages in place death will surely ensue. What shall you do? Give her the only chance for her life by performing hysterectomy. She may not survive the operation, but without it there is no hope. A sufficiently large percentage of these desperate cases have been saved by removing the uterus and adnexa, to give this operation a place at least as a dernier resort.

Digitized by Google

DISCUSSION.

THE CHAIRMAN: Gentlemen, this concludes the series of papers on Puerperal Sepsis, and it is to be left entirely with you whether we shall open the discussion at the present time or wait until we get the final paper by Dr. Martin, and then have the entire discussion.

DR. LONGYEAR: Do I understand that the paper by Dr. Martin is on the subject of puerperal sepsis at all?

DR. MARTIN: It does not bear upon that subject at all.

DR. LONGYEAR: It seems to me that it would be better to discuss the doctor's paper separately then.

THE CHAIRMAN: Very well, gentlemen, the papers are now open for your discussion. It seems to me you have a wide and fertile field for your labors.

DR. BOISE: Mr. Chairman: This is too important a subject to be passed over without a thorough discussion, it seems to me. It has been said, with justice, that puerperal sepsis is essentially a surgical disease. I think that with some modifications that is a correct statement of the case. It is a surgical disease in the sense that it is a wound infection, and a surgical principle in the treatment of such cases is cleanliness and drainage; the removal of all sources from which the sepsis arises—the foundation of infection; and that is the thing which we must bear in mind in our treatment of puerperal sepsis. We must all be prepared to treat the disease surgically. Now, that involves, as has been stated in the papers, a thorough and careful inspection of the entire genital tract. Often, as has been said, infection arises from a pocket laceration, an incomplete laceration of the vagina by which there is a pocket for the reception of diseased products. The inspection of the vagina should be thorough and all wounds cleansed. Then I believe in the use of the douche curette in

Digitized by Google

cases of puerperal sepsis. The gentle use and the skilled use of the dull curette by which all material of a septic nature can be removed. And then inasmuch as there is in the majority of cases apt to be a pocket in the posterior wall of the uterus where septic products will be retained unless we take care that they shall not be, I think that a thorough packing of the uterus is desirable. Contrary to the doctrine taught by many, I believe that the uterus should be thoroughly and closely packed inasmuch as we know that the action of gauze packing is to provoke a current from the uterus—the tendency undisturbed being absorption from the inner surface of the uterus into the lymphatics and into the system—our object should be to check that current and reverse it so that the current should be from the uterus into the gauze, and for that purpose I should pack the uterus full. All who have observed anything of that nature have observed that the gauze becomes very rapidly saturated and ceases to act as a drain. That has been used as an objection to the gauze drainage, but that is only an objection in so far as the gauze is left too long. Packing in the way I have described necessitates constant attention, or almost constant attention on the part of the surgeon so that the gauze shall be removed when saturated whether it be in three hours or four hours or six hours; it should be removed and replaced in a very short time and the rapidity with which the gauze is saturated will be lessened. In the great majority of cases where that treatment is instituted early a check will be put upon the progress of the disease, the temperature will fall, and all of the bad symptoms will clear up. If, in spite of that treatment, the temperature remains high and is not very much influenced, we can be very certain in our minds that we have not reached the focus from which absorption occurs. Whether it be in the tubes, whether it be in the tissues of the uterus or whether it be in the lymphatics, we know that we have not got at the seat which we must attack. Those are the cases where hysterectomy is brought forcibly to the mind of the surgeon and where experience and judgment are required to determine what shall be done. But if hysterectomy is to be done, I

Digitized by Google

believe it should be done comparatively early. After a thorough trial in the cases such as I have mentioned, with the treatment I have described, if the temperature continues high, threateningly high, I think you are justified in resorting to the more radical measures, to hysterectomy.

DR. O. H. CLARK: Mr. Chairman and members of the State Society:

The papers read this afternoon on Puerperal Sepsis have been exceedingly interesting to me. One point, however, regarding the treatment I would like to emphasize, inasmuch as we have a remedy, (if I may so term it), which is a sure cure in almost every case, namely, prevention.

The prevention of disease is one of the all important questions which we as medical men of today are seeking to accomplish. If there is one affection that woman is heir to in which this principle can be carried out, it is certainly in puerperal sepsis. The prevention of this malady should be ever before our mind, and knowing what the prevention is, viz., asepsis and antisepsis, they should be enforced to the letter. In those cases in which we suspect infection, and on examination are found pathogenic germs of the vagina, antiseptic douches should be advised. However, in those cases in which such conditions do not exist, external antisepsis only should be employed. Absolute cleanliness of the hand is of the greatest importance during confinement. Plenty of soap and water with brush (tincture of green soap is excellent), followed by bichloride 1: 1000.

If the simple rules of asepsis and antisepsis were put into action as they are known today and followed as they should be during the puerperium, we would not hear so much about puerperal sepsis, and the treatment surgically would certainly be diminished.

DR. MARTIN: I was unfortunately detained on account of being obliged to read a paper in another section, and was kept away from this section in the early part of the hour and did not hear all of the papers, but I want to speak of one thing that I regard as of great importance. I enjoyed Dr. Alvord's paper, and what I heard of Dr. Longyear's paper

Digitized by Google

and agree with him in the main. But Dr. Alvord spoke of clearing out the uterus with a curette thoroughly and that a very proper procedure would be to irrigate thoroughly with as hot water as possible. Now I say this is an important point; but I cannot agree with the use of very hot water; and I will tell you why. The object is to get a flow from the walls of the uterus to the interior and then to the vagina and to the external world. Now, a hot douche promotes contraction of the walls and the blood vessels and checks the flow, while a warm douche causes a flow from the walls to the interior of the uterus; you use a hot douche and it certainly contracts to a marked degree and in its contracting and for a long time afterwards the interior surface of the tissues is closed up, the doors are shut so that what septic material is already in the tissues is kept there; and so I say it is an important principle not to use the hot douche, but to use a warm douche for irrigating after curretting.

Dr. McCLINTOCK: Mr. President, ladies and gentlemen:

I know very little of puerperal fever from experience, and I don't want to know much about it. It seems to me it is among those much-to-be-dreaded diseases. The thing that I am interested in is the discussion in regard to the serum treatment as discussed by Dr. Longyear. Judging from the demand for anti-streptococcic serum, there must be either one of two things—it is giving good results, or what is just as likely, the practitioner, feeling hopeless with any other method of treatment, tries this simply as a last resort. Which of these is true I really do not know. I hear reports, good, bad, and indifferent.

I have had some correspondence lately with Dr. Williams of the Johns Hopkins, and it seems that a committee from the American Gynecological Society are to make a test and report on this subject. I expect them to say that no positive proof of good is found. If the test is made from a laboratory standpoint that is perhaps the only conclusion they can come to. We cannot prove in the laboratory that there is anything of particular value in anti-streptococcic serum, simply because we have no ready means of measuring its potency. Never-

Digitized by Google

theless the reports that I see lead me to believe it does do some good in cases to which it is applicable. If you recollect Dr. Longyear's figures taken from Williams of Johns Hopkins University, in forty cases there were found streptococci present in but eight. Now taking that estimate of forty cases, it shows you are going to fail, necessarily, in thirty-two cases. If anti-streptococcic serum can do any good, it can only do good in these cases which have that particular germ. The only scientific attitude we can take is that the remedy is as yet an experimental one.

DR. HEMENWAY: Mr. Chairman and members of the Michigan State Medical Society:

I am very glad to have the opportunity to be present with the members of this society at their annual meeting, and I have been very much interested in the discussions that have just taken place for reasons that some of you know. I have had some experience with the disease grouped under the general term "puerperal fever", though I am pleased to say that for the past seven or eight years I have had very little contact with it. I wish to emphasize one point that was made by Dr. Clark—the prevention, rather than the cure of the disease. To that I attribute the comparative freedom from the disease in my practice. I do not use a douche, as a rule, before confinement. I seldom do; for the reason that any water applied tends to take away the natural secretions. I believe the douche before confinement has a tendency to retard labor and make it more difficult. If I find general evidence of infection before, as leucorrhœa or anything of the kind, then I may use the douche before confinement, but as a rule I do not use it before confinement. At the time of confinement I am as careful as possible to prevent infection from hands or instruments. I am also very careful to see that all placenta is removed entire. I use Crede's method of expression, and assure myself that the womb is firmly contracted. If a small portion of the placenta is left, I have come to the conclusion that it is better to wait for forty-eight hours if necessary, before taking any operative measures and I seldom or never have occasion to take any operative measures after waiting

Digitized by Google

that length of time, thus allowing nature to relieve herself. After confinement I have as a rule for some years used a one or two thousand solution of bichloride of mercury injection on first, second, third, fifth and eighth days. I have used it in the vagina; not an intra-uterine injection. Where I have used this treatment I have almost never had any trouble whatever. I formerly used a carbolic injection, but I discarded it because I found that using it as strong as I dared to use it, I did not get as good effects as with the one to two thousand bichloride solution; after using the bichloride solution in the vagina I have never seen any toxic effect from it.

Another thing, I advise my patients when they wish to pass water or have a movement of the bowels to assume a sitting posture. That favors emptying out of the womb and I believe largely prevents the infection. I have had, since I adopted this method of routine treatment, a few cases of fever. The first one that I remember was a case in which the patient was confined on Monday; I ordered a douche as usual; I called the next morning and was informed that it had been given. That afternoon I happened to dislocate my shoulder and did not see the patient again until Saturday. I afterwards learned (which I did not know at the time of my Saturday call) that the douche had never been given; that the tablets I had ordered had never been purchased. It was in the latter part of March or the first part of April that the confinement occurred, and I afterwards learned that on the Thursday following the confinement the patient wished something that was in the back kitchen, that had a natural ground floor, and nobody being near at the time she got up and went out there and got what she wished and went back to bed. Saturday when I called I found that she had a fever of 105°. I depended entirely on the bichloride injection intra-vaginal and intra-uterine, but chiefly intra-vaginal, and a mercurial carthartic and quinine, and the patient recovered.

In another case: I was surprised on the fourth day, I think it was, to find some fever. On a close inquiry I found that instead of a tablet containing seven and a half grains of bichloride to be put in solution, the druggist had substituted a

Digitized by Google

tablet containing about one grain, I think, of bichloride; and when I "went for him," (the case occurred not in the town where I live, but in an adjoining town), he said he never had seen a prescription for so strong a dose, and he thought I must have made a mistake and he had taken the liberty of doing as he did. In other words he had no such tablets as I ordered, and he used what he had. I immediately sent for some of the proper tablets, and the case was treated as the others and the progress was satisfactory. Two weeks ago last Monday I confined a woman. She was getting along satisfactorily until about last Saturday the lacteal secretion was not up to the standard which she desired, and her friends advised her to drink freely of oatmeal gruel, cocoa and so forth, and the consequence was that on Monday I was called down and found the temperature at 102°. I was satisfied that there was no infection of the system from the vaginal tract; I concluded that the conditions came from overcrowding the digestive system and overloading the whole system with new nutriment. I used a mercurial cathartic and small doses of quinine, and the next day the temperature was 100°, and the next day the temperature was normal and she had no further trouble. So far as I remember these are the only cases that I have delivered where I have had any fever following confinement.

I would emphasize the importance of the precautions of antiseptic treatment before the sepsis in the system occurs.

I would like to make one further suggestion, based upon the last case that I have just mentioned and on some experiences I have had here in Michigan. We know if in the cultivation of germs of diphtheria, for example, at a low temperature, they propogate slowly, at a high temperature they propogate more rapidly. It seems to me more than likely that a fever produced not from septic conditions at all originally, may favor the production of septicaemia by elevating the temperature of the body and making it a better place for the growth of septic germs.

DR. BELKNAP: Mr. Chairman: Not having been present to listen to the first part of the discussion possibly I may re-

Digitized by Google

peat something that was said before. It seems to me that in common with the general tendency of medicine there has been an attempt to reduce all puerperal sepsis to a scientific basis and say that the physician is to blame for its existence. I believe that as a principle of the practice of medicine it is wrong for us as practitioners in our discussion to presume something that we do not know. We cannot reduce puerperal sepsis to a scientific basis; at least I don't believe we can. The tendency of the remarks here today shows that. If there be an attempt to reduce it to that and place ourselves on record as thinking or saying that all puerperal sepsis is due to neglect of the physician we bring upon a great many deserving physicians an undeserved stigma. It has been my privilege to see several cases of puerperal sepsis, and I will say that some of them, the very worst that I have seen, have occurred in physicians' families where the utmost precaution was used to prevent the puerperal sepsis. It has been shown I believe, or at least opinion has been expressed, that puerperal sepsis may occur in various portions of the genital tract, and I think it will likewise be acknowledged that it may occur from infection by a variety of germs; that it may not occur from any single germ, but from quite a number of those germs acting at one and the same time. If this be true it practically nullifies the conclusions that the medical profession have placed themselves on record to have, namely, that the physician is the person who is practically responsible for it. Now, it seems to me that we are unjustified in placing ourselves on record in any such way. I for one am willing to acknowledge that there are a great many cases of puerperal sepsis that I do not believe can be accounted for on any such basis.

Dr. Della Pierce: I would like to inquire, Mr. Chairman, not hearing the first paper, but the discussion, I want to inquire if it has not been the general experience of physicians that most of these cases where puerperal sepsis exists are contracted from causes that the physicians are not at all responsible for, or for the conditions which exist? In cases of abortion, either criminal or otherwise, often no physician has

Digitized by Google

been called until the disease has developed to a greater or less degree.

DR. WHINERY: Mr. Chairman: I have not very much to say in conclusion. In Dr. Hemenway's discussion he stated we should try or aim at asepsis rather than antisepsis, and I believe in that; but furthermore he stated that he always employed douches after labor. This is somewhat of a confession that he has not always been successful in his aseptic measures. As I stated in the paper, in all cases it has been found that there are germs in the vulvar outlet external to the hymen, and in fifty per cent of the cases, by the use of the speculum, these are carried into the vagina. It depends on how successful we are in getting rid of these germs as to what our results will be. I am not in favor of using the douche after labor in a routine way. When necessity arises for it, I think then is the time to use it.

DR. LONGYEAR: Mr. Chairman: I have very little to say in closing. There are one or two points that have been discussed that I wish to speak of. There was one point that I touched upon in my paper that I think perhaps might be emphasized a little more, that is regarding the careful attention that must be given in the examination of our patients which are suspected to be septic, by having fever after confinement. There is no one, I think, especially in general practice, who has other cases of confinement due, which he knows he may be called to at any minute, who does not dread to put his hands into these cases, but they must do it and do it early and thoroughly if they expect them to get well. First, they must examine them carefully by speculum and otherwise, to make their diagnosis properly, and they cannot do this on the principle that they will just handle them as little as possible so as to safely get on to the next case. They must go into each case thoroughly in order to take care of them properly, and cannot do it in any half-hearted way; they have got to take care of that case and let the others go; that is all there is to it.

Now with regard to hysterectomy in puerperal sepsis. I must take issue with both of the gentlemen who have spoken

Digitized by Google

in favor of it. I have given up any idea of ever using that operation for puerperal sepsis. And I take exception to Dr. Alvord's statement that the records will show that it is even a justifiable operation. I don't think it is by any manner of means; I don't think the records show that. The records show, so far as I have seen, that it is an unjustifiable course. The cases that have lived after it are exceedingly rare in the number that have been reported. We operate there under the worst possible conditions. If you operate after you have tried other things, as Dr. Boise says, you will probably be too late. To be successful the operation must be made fairly early; that is where the trouble comes in. I do not want to do the operation, nor you do not if you can help it, so you try everything else you can think of, and when you come down to the consideration of the operation the lymphatics are so thoroughly affected throughout the broad ligaments as to make it useless, as the septic foci will, many of them, be beyond reach of the knife. I do not believe it is a proper thing to do; I think the cases will stand a great deal better chance and a greater per cent will get well by doing everything else that we know how to do now, and consider the operation of hysterectomy unwarranted.

Dr. Alvord: Mr. Chairman: I thought a few hours ago that there was a good deal that I wanted to say in closing this discussion. I think now there is but very little. I would not expect to instruct this crowd by saying anything. But there are one or two points that I cannot pass by in silence, and the one freshest in my mind is the one last made by my friend Dr. Longyear. He scouts the idea of hysterectomy, and he does it for reason that so few live and he tells you that it is because you do not operate until away late in the case, hoping to save your patient by other means, and consequently the lymphatics are affected, the peritoneum is involved and the broad ligaments also, and your patient is going to die anyhow. Now, that reminds me of the argument we used to use against appendicitis. And when I first began to operate for appendicitis and when several of you, I presume most of you, having that kind of work began to operate

Digitized by Google

for appendicitis you lost your cases; and you lost the majority of your cases until you learned what was necessary to save them, and then you did not lose them. It is only a short time since hysterectomy was suggested for the first time in cases of puerperal sepsis, and it is only a few months since we knew what bacillus was affecting them in the majority of the cases, and in some cases we do not know it yet. I mean to say that it is not possible for one out of ten of you here present before me to tell me when you get your next case of puerperal sepsis what is the particular form of bacillus that is producing it. I mean to say that there are so many different forms which separately and jointly produce it that you have very much reason to think carefully before you say: "I have got the cause." When you do and are able to tell me whether you have erysipelas in the uterus or whether you have diphtheria in the uterus (I mean those particular bacilli that produce those conditions), then I will agree with my friend Dr. Longyear that you will use that particular serum which will undo that particular disease and that there is no need of hysterectomy. But in our present gropings after the truth, reaching out after some scientific facts that are going to help us in the future, for God's sake, in your darkness, do not let that woman die when you can possibly save her by an operation.

Digitized by Google

EXCERPTA AND DEDUCTIONS FROM THE RECORDS OF GYNECOLOGICAL CASES.

J. N. MARTIN, M. D.,
Ann Arbor.

These excerpta and deductions that I have incorporated in this informal paper are from the records of over 6,000 gynecological cases and about 2,000 operations.

While I shall express myself frankly, I wish it distinctly understood that there is not the slightest intention on my part to belittle or underestimate the work of the general practitioner; for I am fully aware that he can teach me many things, more particularly outside my own specialty. The general practitioner and specialist are mutually helpful. The latter has opportunities to see a large number of cases in his own line of work, and, by grouping these, is able to deduce practical results, which I trust are of value to general practitioners.

When I was in general practice, I knew how difficult it was to try to cover all branches of medicine, and now I realize that I do not know all of gynecology, notwithstanding that for years I have devoted all my time to that one branch of medical science.

In writing from so many cases, this paper will not permit of more than brief citations, reports of cases, and deductions from single cases or groups of cases.

THE USE OF NORMAL SALINE SOLUTION.

First, I wish to add my testimony in favor of the use of warm normal saline solution after or during operation, when

Digitized by Google

there is shock or liability of shock; and to be injected into a vein, into the cellular tissue, into the bowel, or turned into the abdomen, pro re nata.

A quart of this warm solution left in the abdomen has a most excellent effect in reviving the patient, promoting early action of the kidneys, and, if perchance there should be any septic material left behind, it dilutes it, and renders it much less liable to infect.

Saline enemeta after operations do have a very beneficial effect in relieving shock, diminishing thirst, and promoting the action of the kidneys. I very frequently order these and have them given slowly so they will be retained; the temperature of the solution varying from 100o to 112° Fahrenheit, according to condition of patient. Of course, when an immediate effect is desired, injection into the cellular tissue or veins is best.

HERNIÆ AFTER ABDOMINAL OPERATIONS.

After several hundred abdominal operations, I have had less than one per cent. report herniæ, at least I have heard of less than one per cent., directly and indirectly. Judging from the reports of others, this is a remarkably small number. I attribute my success in this line, not so much to my skill as an operator, as to the precautions taken the first month after the operations, and the precautionary advice instilled into the patients.

I make an incision no longer than is necessary to do the work well, close the peritoneum with continuous catgut suture, and the other structures en masse with interrupted sutures. Apply first dressing and then adhesive straps, then the pads, and the many-tailed bandage over all.

Patients are not allowed to sit up for three or four weeks; the adhesive straps and outer bandages are worn two weeks longer, and afterwards the patient is to wear a well-fitted abdominal supporter for a year or longer. and avoid heavy lifting, jumping, etc.

RETRO-DISPLACEMENTS.

Every year I have a large number of patients with retro-displacements of the uterus, and a large majority has been

Digitized by Google

properly diagnosed before I see them; some have had "local treatments", pessaries, etc., but have not been cured; about twelve to fifteen per cent. have been told that no harm will come from these displacements. I wish to state positively that the changes in the uterus by these malpositions are not the most harmful, although the uterus may be kept engorged and sensitive, and reflex irritability result, but the ovaries are obstructed too; their circulation is obstructed, and the reflex troubles from the reproductive system are increased. What is still worse, the ovaries undergo degeneration, and later, this may necessitate their removal and the unsexing of the patient.

In this malposition, a uterus is more apt to become infected, and if infected, the tubes, ovaries and peritoneum are much more liable to become diseased.

Again the proper action of the bowel is interfered with, and constipation and perhaps hemorrhoids result. If in this condition, operations are performed for the relief of the hemorrhoids, the benefit will be but temporary at best, for the cause has not been removed. In such cases, laparotomy, breaking up of adhesions, if any, and making an anterior suspension or fixation are indicated; if these are done the number of hemorrhoidal operations will be deminished, and those that are necessary, will give better and more permanent results, if other conditions are favorable.

Again, muco-collitis is often caused or increased by retro-displacements of the uterus, and the first and most important step for relief of this is to replace and keep in place the uterus.

I believe the most fruitful avoidable cause of these retro-displacements is keeping patients in the dorsal condition too much after labor at full term and sometimes after abortion. The uterus is then heavy, the ligaments relaxed, and gravity does the rest. When patients assume the upright position, the intestines drop down in front, and the malposition increases.

I have asked hundreds of these patients if directions were given them about changing position, and not to lie on the back too much after labor; more than half have replied in the neg-

Digitized by Google

ative. Of course, it is well to exclude some whose memories did not serve them well, but then there would remain a large number of uninstructed with regard to this exceedingly important principle.

ABORTIONS.

For the last ten years I have taken the trouble to inquire of patients concerning their treatment after abortions, and in hundreds of cases have learned that not one-fourth of the precautions were taken as after labor at full term. I believe they should have more care and attention than after a full-term labor.

Nature knows how to take care of a ripe uterus, but she should have the most favorable conditions for proper involution after abortion.

Many ills date back to abortions imperfectly or improperly treated, and sometimes entirely neglected, as when physicians are not even called. Much of this is due to the prevailing opinion among non-medical people that after abortion little or no care is needed. As physicians, we should explain the reasons for proper care and insist upon its being carried out thoroughly, for the derangements that result are many and far reaching.

USE OF UTERINE STEMS.

Judging from my records there are some physicians who do not exercise due asceptic precautions when using uterine stems for obstructive dysmenorrhoea. I have collated several cases where stems were introduced into the uterus at the office, and patients allowed to walk home.

In the last year I have seen two most marked examples of septic infection following their careless use, and every year see bad results following their use without proper precautions. I believe that whenever a stem is to be inserted into the uterine canal that the patient should be prepared with about the same care and thoroughness as for a hysterectomy. The canal should be divulsed under anaesthesia, the uterus curetted gently or thoroughly, pro re nata, and the uterus should be thoroughly irrigated before the stem is introduced, then the

Digitized by Google

vagina should be gently packed with antiseptic gauze, and patient should be kept in bed while the stem is in the situ.

I have used these stems many times with these precautions and with no bad results.

The evil effects of obstructive dysmenorrhoea are so great, that I regard this mode of treatment of much importance and safe, when properly done. Some recommend marriage for these cases, but they too often remain sterile, the suffering continues, under existing circumstances, the marital relations increase the evil effects of obstruction. I have seen many pitiable illustrations of this in the way of nervous wrecks.

LACERATION OF THE PERINEUM AND ITS RELATION TO IRRITABLE BLADDER AND SUPPOSED CYSTITIS.

I have operated upon more than five hundred patients for laceration of the perineum and the resultant complications, ranging in age from sixteen to seventy-nine years. In a large percentage of these, several years had elapsed between the time of laceration and restoration. Many of these patients complained of irritable bladder and not a few had been treated for cystitis. An examination of these patients proved that less than three per cent. really had cystitis; cystoceles had formed, the bladder could not be completely evacuated; the residual urine decomposed and caused frequent and sometimes painful micturition. Early perineorrhaphies not only prevent prolapse of the bladder in most cases, but if the operation is done before the muscles atrophy, the results will be much better.

Another class of patients who come to me with the statement that they have inflammation of the bladder, and yet have not, are those with uterine tumors, inflammatory deposits or adhesions encroaching upon the bladder, and cause frequent and sometimes painful micturition. I have seen so many of these patients, who have had their bladder irrigated, taken diuretics, etc., etc., for cystitis, when it did not exist, that I wish to call special attention to the advisability of examining the urine carefully and exploring the bladder and adjacent structures before advising treatment, or treating for cystitis.

Digitized by Google

A patient came to me from Indiana with the following history: Mrs. M., aged 34, no children, two abortions, she said she had suffered from cystitis for six years; she complained of frequent and painful micturition and sometimes obstructed flow; she had had her bladder irrigated hundreds of times, and had taken much medicine for supposed cystitis. An examination revealed a fibroid tumor of the uterus the size of a hen's egg, located so as to press directly upon the base of the bladder and distal end of the urethra. I split the uterus anteriorly, enucleated the tumor, and the patient made an excellent recovery and had no further trouble with the bladder. I might cite many similar cases to show how causes outside of the bladder produce results simulating cystitis.

MALIGNANT DISEASES OF THE OVARIES.

It has been but a few years since we were taught that nearly all ovarian growths were not malignant, recently more thorough examinations made of ovarian tumors have proven that about fifteen per cent. are malignant, the percentage of malignancy varying according to different authorities from ten to twenty per cent. It has also been well established that ovarian tumors may be benign in the earlier stage and malignant subsequently; thus early and thorough removal is very important. I have removed many malignant ovarian tumors and some of them remarkable for rapidity of growth and tendency to involvement of other parts.

I wish to report a few cases illustrating these points. Miss MacF., aged 15; she was apparently well and in school until six weeks before I saw her. Five weeks previous she first noticed an enlargement in the lower abdominal region; for two weeks she had been losing flesh and strength rapidly and the abdomen had increased rapidly in size during that time. The tumor extended to the ensiform cartilage when I examined her and with boggy feel and irregular outline; the lower end of the tumor filled the right side of the pelvis. The abdomen was extremely sensitive. I opened the abdomen, with the assistance of Drs. Lynds and Lahuis, and removed three quarts of bloody fluid and a large irregular-shaped friable

Digitized by Google

tumor, which weighed forty pounds. There were many small secondary deposits in the omentum and mesentery. It was a desperate case requiring an incision from the pubis to the ensiform cartilage, but by rapid work and transfusing, the patient recovered from the operation and went home in four weeks. The growth was an adeno-carcinoma of the ovary (medullary variety.) Patient died three months later.

Another patient, aged 45, nine children, youngest seven years old, had passed the menopause five years previous. Only four weeks before I saw her, she first noticed a small tumor in the lower right abdominal region, which grew rapidly and at the end of the four weeks extended beyond the umbilicus. I removed it with the assistance of the same physicians. The tumor was of the same kind as the previous one, and the patient died a few weeks later. Dr. Warthin, pathologist, reported that there were in the patient multiple primary carcinomata, one in the intestines and one in the ovary.

Another patient, operated upon in Dowagiac, at the age of fifty, and one in Jackson, about the same time, aged fifty-nine, with growths of the same nature, proving that the young, the middle-aged and those older are subject to these rapidly growing carcinomata of the ovaries.

Another very interesting case, Mrs. E., aged 31, one child, twelve years old, sent to me for lacerated cervix, and lacerated perineum. Examination revealed a hard tumor of the left ovary. I removed the tumor January 8, '96. It was ten inches in circumference one way and seven inches the other. The interesting feature of the case is this: The tumor was distinctly fibroid, except two small centres about two inches apart, which were found by Dr. Warthin, the pathologist, to be sarcomatous. The patient made an excellent recovery, and there has been no return of the disease, proving the value of an early removal.

There are still some who use absorbents, cathartics, diuretics, electricity, and tap for the cure of ovarian tumors, and, as a rule, patients are thus rendered more unfavorable for operation, the treatment for ovarian tumors; for the kidneys

Digitized by Google

are overworked, strength is reduced, adhesions produced, or the operation delayed beyond the most favorable time. I have operated upon five just such patients within six months. I have also operated upon half a dozen patients with multilocular cystomata which were apparently benign in the beginning but developed malignancy later on. These growths may not be malignant in the early stage but later carcinoma may ingraft itself upon them and they become decidedly malignant on account of the continued pathological condition. All of these facts emphasize early and thorough removal.

FIBROIDS OF THE UTERUS.

Some say that fibroids of the uterus do not kill and that they will disappear at the menopause. I know that some do kill, also that many do not disappear at the menopause, but increase in size and become very serious. In examining the records of one hundred cases operated upon and one hundred not treated surgically, I find the number of deaths from hysterectomies is perhaps one or two more than the number of *complete* deaths from the tumors; but many of these not operated upon wait years for a delayed menopause that does not give the expected relief, or eke out a miserable existence of a "living death."

I do not claim after the many cases I have performed hysterectomies upon that "*all* goes well with *all*," but I do claim that the sum total of suffering and complications after surgical means is very much less than when they are treated by non-surgical methods or no methods at all.

Again, it is impossible to differentiate clinically between a soft fibroid and a sarcoma (as both grow rapidly), or a fibroid and a fibro-sarcoma. I operated upon a patient recently who had a myo-fibroma, sub mucous, and a fibro-sarcoma, sub peritoneal, the latter already ulcerated through the peritonea' covering and with adhesions to the intestines.

CANCER OF THE UTERUS.

Every year I examine from fifty to seventy-five patients who have cancer of the uterus. In one week this year I examined six women in that condition, and have examined as

Digitized by Google

many as twelve in one month, and the saddest feature is that two-thirds or more are so far advanced that operative measures are not indicated, except perhaps curetting or excavating and cauterizing.

I have seen five cases in less than eight months, with cancer of the uterus, under thirty years of age, and three of these had "local treatments" weekly or oftener from three to fifteen months before I saw them and diagnosed cancer. When I examined them, the growths were so far advanced that nothing but palliative measures were indicated. The age of the patient sometimes deceives the general practitioner. I would urge him to be on the alert, because whatever is to be done of permanent value must be done early. Whomever these patients may go to ultimately for consultation and treatment, many of them are divided, in the early stage, among the general practitioners.

Total extirpation of the uterus, early, is *the* treatment; it is positively not a disease to go to the surgeon as a *last* resort, for delay means early death.

I believe that lacerations of the cervix with accompanying eversion, erosion, infiltration, and inflammation, is the most fruitful cause of cancer of the uterus. I have been advocating for years that these lacerations should be properly operated upon early, and I am growing more emphatic every year.

I have operated upon more than 500 such cases, and hope to live to operate upon 500 more. I urge operation for the present beneficial results, and also as a most valuable preventative of that dreaded disease, cancer of the uterus.

DEFICIENT MENSTRUATION.

A class of patients with the following symptoms, I have found difficulty in relieving permanently, young women ranging in age from twenty to thirty-five; they are well developed, florid complexion, full habit, strong, with good appetite and generally with good digestion and assimilation. They follow literary pursuits or are with sedentary habits. Their periods are scanty, gradually diminishing in amount; they

Digitized by Google

gain in weight, sometimes rapidly; they complain of fullness in the head or headache, become confused easily and there is often a feeling of general fullness. These symptoms are usually exaggerated at the time of their scanty periods. Their reproductive organs are generally well developed and normal. I have tried several plans of treatment but with only partial success. I think more vigorous exercise out of doors, modified somewhat during their periods, has given the most satisfactory results.

In conclusion I wish to make another plea for more conservative work upon the ovaries. I feel I have a right to do so after studying over 6,000 gynecological cases before operation and over 2,000 after operation. We can unsex a woman in a few minutes, but after the ovaries are removed we cannot replace them in a lifetime. I have advocated and practiced conservative work upon these organs for many years, and with increased experience, I see more clearly than ever before the reasons for so doing. After observing the unpleasant nervous and mental disturbances which arise in many cases after an early menopause is suddenly established, I am thoroughly convinced that whenever it is possible, some healthy ovarian tissue should be left, for it is a great conservator of sexuality and general well being with most patients.

Digitized by Google

DISCUSSION.

DR. BELKNAP, Niles: Mr. Chairman, I do not wish to be quoted as discussing a paper of this sort. I regard the statements of Dr. Martin as authority, but after having been so concisely and interestingly stated it seems to me that the paper becomes almost more than authority, if we might put it so; it marks one of the most valuable papers, it seems to me, that could possibly be presented here. There is only one thing that I now recall in Dr. Martin's paper, which I think perhaps he will not be at all averse to my mentioning, inasmuch as the authority I shall quote is also named Martin, that is Dr. Martin of Berlin. I think Dr. Martin of Berlin almost never uses any irrigation of the peritoneum. I have seen him operate a great many times and I have never seen him do it once. And in stating this, it is no criticism on this paper of the doctor's here, which I appreciate very highly and in which I was very much interested.

DR. ALVORD, Battle Creek: If I may interrupt this discussion a moment, perhaps we can save time bye and bye. I see by the program that this is the entire work for this Section at this meeting; there will be no meeting of this Section tomorrow and the officers should be elected today for next year. I would move, therefore, that a committee of three be appointed by the chairman to make nominations for officers to report immediately after the close of this discussion.

Which motion was seconded.

THE CHAIRMAN: You have heard the motion, gentlemen, that a committee of three be appointed after the close of this discussion for nominating officers of this Section for the ensuing year. All in favor of it will manifest it by saying aye. Contrary, no.

The motion is carried, and I would like to appoint Dr.

Digitized by Google

Martin, of Ann Arbor, Dr. Belknap, of Niles, and Dr. Whinery, of Grand Rapids, as the committee on nominations.

DR. WHINERY: Mr. Chairman, I would like to state that Dr. Boise has a paper to read before this Section and as his name is not on the program I would suggest that an arrangement be made either this afternoon or to-morrow to hear Dr. Boise's paper.

THE CHAIRMAN: We will be ready to hear Dr. Boise's paper in a short time and are glad to know that he has got a paper.

Are there any further discussions on this excellent paper?

DR. BOISE: Mr. Chairman, I simply wish to emphasize the suggestion offered in the paper on the use of normal saline. I think that is one of the things that has come before the profession more and more, and I think there are a great many uses for it which we have not as yet fully tested.

DR. LONGYEAR: There are a number of good points in Dr. Martin's paper, one of which, flushing of the abdominal cavity, has just been spoken of by Dr. Boise, while it is a valuable proceedure, I do think that it can be abused by using it indiscriminately in the peritoneal cavity. I make use of it much less now in the abdominal work than I used to for the reason that I believe, in septic cases of pelvic disease, you are very liable by the use of the solution, to carry any septic material that may be in the pelvic cavity, where you have been operating, up into the abdominal cavity where it will do a great deal more damage than it will below; so that I have gotten out of the habit of using it, except in exceptional cases, where much pus and debris are present, I wall off the abdominal cavity with gauze pads and simply wash out the pelvic cavity, the seat of the operation. It certainly is a dangerous thing to use in cases of appendectomy where the septic material may be present only in a comparatively smal area of the abdomen, and by using the douche you are liable to wash it through the whole of the abdominal cavity. I think that is a point worth considering in its use. The last point that Dr. Martin touched upon, and I was glad to hear him take that position, was in regard to conservatism in the

Digitized by Google

treatment of the ovary. I think there has been altogether too much of the total removal of the ovaries. The benefit of the doubt has not been given to the nervous system of the woman; in fact, her nervous system has not been considered at all in these operations until quite recently. The doctor spoke of cases of scanty and painful menstruation causing a great deal of trouble. So they do. I have found that the galvanic current works very nicely in those cases, and has been beneficial in bringing about a proper menstruation. I use the negative pole intra-uterine and the positive pole on sacrum. 20 to 60 m's for five minutes, every third day.

DR. MARTIN: I just want to say one word in reply to Dr. Belknap's question. I think he misunderstood what I said regarding irrigation of the abdomen. I learned from this same Dr. Martin, of Berlin, over ten years ago the difference between flooding the abdomen and not flooding it, and for the last ten years I have irrigated but very few abdomens. If I find there is suppuration in the lower part of the abdomen and pelvis, I make a good free drainage down behind the uterus. But what I spoke of, and what he misunderstood, was the use of the normal saline in the abdomen: that is when I get all through with the operation, so it does not need any washing out, the patient is rather weak, I turn a quart or three pints more or less of warm saline solution in the abdomen, and leave it. That is what I said in my paper. Not anything in regard to irrigating, for the less you scrub out, and irritate the peritoneal surfaces, the better you are off, because tissues that are not bruised can take care of a great many germs and tissues that are bruised are very susceptible, and for that reason I do not believe in too much irrigating and scrubbing.

Digitized by Google

THE TECHNIQUE OF ALEXANDER'S OPERATION.

EUGENE BOISE, M. D.,
Grand Rapids.

The one all important indication in the treatment of backward displacements of the uterus, is to replace the uterus in a position as nearly normal as possible.

I believe this can be accomplished, in suitable cases, better by Alexander's operation than by any other.

Several objections to this operation have been adduced by various surgeons who have not obtained the results they desired by its use. That these results were because of a faulty technique, I shall attempt to show. And to this end I shall first describe the operation as I think it should be made, and then defend my position.

The operation consists, as all know, in shortening the relaxed round ligaments through external incisions. The guide to this incision is the pubic spine. This can always be found. In thin patients, easily; in those with a thick layer of fat, by introducing the index finger under the tissues at the commissure of the labia majora, and carrying it up to the pubis. The incision must be parallel to Poupart's ligament, directly down to the spine, and must be long enough to lay bare the external ring and the intercolumnar fibres of the fascia, covering the inguinal canal. The length of the incision through the integument will vary according to the amount of fat. Divide these intercolumnar fibres nearly the entire length of the canal. To find the ligament, make strong, intermittent traction downward and inward on the labium of the corres-

Digitized by Google

ponding side, first separating the two columns of the fascia by tenaculæ. The tissues in the canal thus being exposed, the ligament will be seen to move in response to the traction on the labium, and can easily be picked up with forceps. Carefully separate it from the accompanying nerve, muscular fibres and connective tissue, and draw it out through the internal ring. This is generally easily accomplished in "suitable cases," that is, cases where there are no pelvic adhesions. As the ligament is drawn through the internal ring, it is accompanied by the adherent peritoneum. This must be carefully stripped back as far as possible. This is important. Draw the ligaments out till the uterus is strongly anteverted, stripping the peritoneum back as thoroughly as possible, then relax the ligaments till the peritoneal envelope is entirely free from the canal, that is, till there is no "dimpling" of the peritoneum into the internal ring. Now fasten the ligaments in the canals, in their new positions. This I do by two sutures of fine silk to each ligament, passed through one side of the fascia, three or four lines from its edge, then through the ligament in such a way as to separate its fibres rather than cut them, and out at a corresponding point in the other pillar of fascia. Leave these untied till the edges of the fascia have been accurately united by fine chromicized catgut or kangaroo tendon, then tie the silk sutures so as to bring the ligament up close to the under side of the wound, but not to put tension on them. The final step is to unite the integument by interrupted sutures of silkworm gut, so placed as to unite the tissues in such manner as will leave no dead spaces.

This completes the Alexander's operation, as generally made, but is not perfect in that it allows too great mobility to the lower part of the uterus, because of the over stretching of the utero-sacral ligaments.

Therefore, before making the operation above described, I ask my assistant to draw the cervix forward under the pubis. I then make two incisions behind the cervix in a line with the utero-sacral ligaments, through the mucous membrane, and dissect with the finger to a depth of perhaps an inch. Then I pass a full curved needle, armed with heavy catgut, deeply

Digitized by Google

through the wound, from one angle to the other, picking up the relaxed utero-sacral ligaments if possible. I leave the sutures untied till the other steps of the operation, as described above, are made. Then while an assistant separates widely the lips of the wound, each suture is tied, thus drawing the cervix back and ultimately holding it there by the broad cicatrices formed by the wounds.

Alexander's operation thus made, would theoretically remedy a non-adherent, retro-verted uterus in the most perfect manner possible; but various objections to the operation have been advanced which have proved so powerful to many as to cause them to abandon the operation.

These may all be grouped under these four heads:

1st. Difficulty in finding the ligaments.

2nd. Liability to the occurrence of hernia.

3rd. Tendency of the uterus to again retrovert; and

4th. Frequency with which suppuration occurs.

We hear much less now than formerly of the difficulty of finding the ligaments; as their location in the canal is nearly constant, and they are more easily recognized than formerly. But, that there may be as little delay as possible, and the least possible injury to the other structures of the canal, I have adopted the rule of always locating the ligament by traction on the corresponding labium before touching the structures of the canal. Since adopting this rule I have had no trouble.

The objection that Alexander's operation predisposes to hernia, is not well founded, if the operation is performed as described above. The keynote to successful prevention of hernia is thorough stripping back of the peritoneum from the ligament and sufficient relaxation of the over stretched ligament to carry the peritoneum back fully into the abdominal cavity. Bear in mind that the internal ring is not enlarged, but on the contrary, is more closely filled than before the operation, as almost invariably the portion of ligament drawn out into the canal is much larger than the thin, atrophied portion of the ligament occupying the ring and canal before operation. But if there is a slight pouching of the peritoneum

Digitized by Google

into the canal, it is a direct invitation to hernia. If, however, the peritoneum is well stripped back, leaving not even a dimple at the ring, the tissues at that point will be firmer and more resistant than before, and I do not believe hernia would result even if the external fascia were left ununited. But to render everything as secure as possible, the fascia is accurately united, and the line of union reinforced by two buried silk sutures. These silk sutures have thus a double function, first, to reinforce the line of union in the fascia; and second, to retain the ligament in its new position. This end has been sought in numberless ways by different operators, but it is useless to pass these various methods in review, as my object is simply to present what I believe to be the best method.

The only valid objection to these permanent silk sutures, is the trouble they might cause should suppuration follow the operation.

It is true that suppuration too often occurs in these inguinal wounds. For this there may be various causes, but all may be embraced under these three heads:

1st. Infection at the time of operation, from unclean hands, instruments or material.

2nd. Infection after the operation because of exposure of the wound; or

3rd. Fault of technique.

The first two causes I shall not discuss as the remedies are obvious. But I mean by faults of technique, that suppuration often occurs by reason of dead tissue or "dead" spaces. Dead tissue produced by the tearing and mangling of the structures of the canal in a blind search for the ligament. Dead spaces because in laying bare the fascia the overlaying connective tissue is stripped away so far that unless care is exercised, dead spaces are left when the integument is united.

When the operation is strictly aseptic, when the ligament is found and separated from the other structures of the canal with the least possible violence, when the connective tissue overlying the fascia is carefully and accurately united, as well as the integument, and when the wound is so dressed and

Digitized by Google

secured as to prevent post-operative infection, there will be no suppuration; and anything less than this is an imperfect operation.

But we are told that suppuration may occur in the wound months and even years after the operation, if buried sutures are left. This may occur where silver or silkworm gut is the material used, because the stiff ends of the sutures will be a constant source of irritation in these movable tissues. But when fine sterile silk is used and the ends cut short, I do not believe there is the least danger of late suppuration.

The objection that Alexander's operation is not a permanent cure of retro-version had more force formerly than now. I have seen one case (and only one) in my own practice, before I used buried sutures. But when the ligaments are well drawn out, and held by buried sutures of silk, and when the cervix is held back by the formation of adhesions behind it, I believe the cure is permanent.

Of course, if there be a rectocele, with a perineal laceration, these must be corrected, in order to remove as far as possible all conditions that predispose to retroversion of the uterus.

Digitized by Google

DISCUSSION.

DR. LONGYEAR, Detroit: Mr. Chairman: The paper by Dr. Boise is upon a very interesting subject to me. I believe that his assertion, started out with, is correct, that the shortening the round ligaments is the proper operation for simple retro-displacement of the uterus; that is, retro-displacement with or without prolapse. I think it also assists in holding up the ovaries, when they are also prolapsed. Of course it is not applicable, as the doctor said, in cases where there are adhesions holding the uterus back to the rectum or the pelvic walls. Those adhesions must be cared for, before the uterus can be replaced or held there. The method of operating as the doctor described is one that I think ean be improved by using the method which was described by Dr. Kellogg before this society, I think two years ago. I have used it, and have found it an exceedingly beautiful operation, performed according to Dr. Kellogg's method. It is the method of finding the ligaments with a tenotomy hook which makes it of especial value. I think some of you will remember, this was to cut down, make your incision inside of the internal ring, an incision an inch in length, except in the case of very fleshy patients, when it has to be extended a little beyond that, then by blunt dissection with the hooks, the surface of the tendon of the external oblique is laid bare, a small puncture made through it, just above Poupart's ligament, and through this the ligament is pulled up with a hook. The operation as described by Alexander has been unsatisfactory, I think, in that by it we find the ligament with difficulty and where it is small and very apt to break. I have found this operation very satisfactory indeed.

DR. C. L. BARBOUR, Albion: Mr. Chairman, the question that naturally comes to my mind in these cases, is

Digitized by Google

this: I can fully agree with the gentleman who read the paper and the remarks of Dr. Longyear in regard to the satisfaction derived from this operation in simple cases of posterior displacement of the uterus; but it seems to me that it is not more than one time in ten that we have a simple case of retroversion, without more or less adhesion. They are quite firmly fixed to the muscles, fixed to the tissues that are themselves somewhat movable. And while I have sent quite a number of cases of this character to Dr. Kellogg, before I did any of that kind of surgery myself, I never saw one operation that was a success in the cases that I have sent him. In a great number of these cases that come to the general practitioner, he finds they have been of long standing, a history of constipation, complaining of a dragging sensation which brings the patient to consult you, are indicative of more or less adhesion. For a safe method of replacing and retaining this posterior displacement of the uterus, I do not think the Alexander operation is in it for a minute in efficiency with the operation described and performed by Dr. Kelly of the Johns-Hopkins University. I believe that I am safe in saying that nine out of ten of these cases, there are adhesions more or less, and I believe what Dr. Kelly teaches and what Dr. Martin teaches, that an abdominal incision, breaking up these adhesions, and freeing the uterus and ovaries that are attached to other organs and fixing it to the abdomen is the right treatment in this class of cases.

Dr. Boise: Well, Mr. Chairman, there is very little to say on the subject. I think we all agree that the Alexander operation should not be done in cases which are not suitable, and those cases are certainly not suitable where the uterus is held down by adhesions. But I can hardly agree with the last speaker that nine out of ten are such cases. Many of us know, who have done abdominal operations long, that we often find retroverted uteri without any adhesions. But if you are unable to determine whether there be adhesions or not, or whether they will be troublesome or not, it may be well to replace the uterus, and hold it in place by a pessary. If it can thus be held in place, with relief to the symptoms,

Digitized by Google

Alexander's operation is indicated. The two operations, Alexander's and suspension, are entirely distinct in their field and they are both good operations; but in the cases where Alexander's operation should be used, and those are cases where there are no adhesions, it is the operation to be preferred, as I perform it. The objection to the operation as described by Dr. Kellogg and referred to by Dr. Longyear, is to me theoretical entirely, because I have never made the operation; but the theoretical objection which I would advance is that it is more difficult to strip the peritoneum back sufficiently far without greater relaxation of the ligaments than you desire. The peritoneum must be stripped back so that with the relaxation of the ligaments it will go forward into the abdomen; whereas if the peritoneum is left partially within the ring there is liability to hernia.

The objection then, aside from finding the ligaments, which we will take the doctor's word for as being easily done, is the difficulty of stripping back the peritoneum sufficiently from the ligaments.

Digitized by Google

SECTION ON GENERAL MEDICINE.

OFFICERS.

Chairman—SAMUEL BELL, Detroit.
Secretary—ANDREW P. BIDDLE, Detroit.
Orator—CHAS. G. JENNINGS, Detroit.

SECRETARY'S MINUTES.

FIRST DAY, THURSDAY, MAY 4th.

2 O'CLOCK P. M.

The section was called to order by the Chairman. The following papers were read and discussed :

The Epidemic at Siboney, C. T. Newkirk, Bay City.

Report of a Case of Marked Disturbance of the Digestive Tract, caused by an Undeveloped Uterus, James N. Martin, Ann Arbor.

Prognosis of Pneumonia in its Relation to the Etiology, Herbert M. King, Grand Rapids.

Contagious Cutaneous Affections, A. E. Carrier, Detroit.

Primary Syphilis, Ralph H. Spencer, Grand Rapids.

Vaccine, C. T. McClintock, Detroit,

Temperature and Disease, H. J. Chadwick, Grand Rapids.

SECOND DAY, FRIDAY, MAY 5th.

8:30 O'CLOCK A.M.

Stricture of Aesophagus, and Electrolysis with a new Aesophageal Electrode Charles D. Aaron, Detroit.

AFTERNOON SESSION, FRIDAY, MAY 5th.

2 O'CLOCK P. M.

The Proper Relation of Climatic to Other Methods in the Treatment of Pulmonary Consumption, H. M. Dunlap, Battle Creek.

Digitized by Google

The Relation of the Medical Profession to Proprietary Medicine, C. C. Yarbrough, Detroit.

The Early Recognition and Treatment of Insanity at Home, William H. Edwards, Kalamazoo.

Moral Imbecility, David Inglis, Detroit.

A Brief Account of the Minute Anatomy ot the Sympathetic Nervous System and its Relation to the Cerebro-Spinal Nervous System, G. Carl Huber, Ann Arbor.

A Series of Analyses, in Acute Melancholia, of the Stomach Contents after a Test Breakfast, Samuel Bell, Detroit.

The election of officers resulted as follows :

Chairman—T. A. Felch, Ishpeming.
Secretary—John A. McColl, Grand Rapids.
Orator—A. E. Carrier, Detroit.

Adjourned.

ANDREW P. BIDDLE,
Secretary.

Digitized by Google

THE EPIDEMIC AT SIBONEY.

C. T. NEWKIRK, M. D.,
Bay City.

When I learned that yellow fever was raging at Siboney, having had a large experience in treating that and other tropical diseases, I felt it my duty to go to the front and do all in my power for the relief and comfort of the brave soldiers who were so courageously advancing the cause of liberty and so uncomplainingly enduring the hardships incident to such a campaign.

Early in July I was commissioned by the President, and immediately started for Cuba. A large number of physicians and nurses were sent at the same time. Our ship the U. S. Cruiser Resolute, commanded by Captain Eaton, and laden with arms and munition of war, besides hospital tents and tons of delicacies for the sick, left her pier at New York amidst the cheers of a large crowd that had assembled to see us off.

We were seven days on the voyage and owing to the danger of encountering Spanish torpedo boats were obliged to sail at night without light, making the trip somewhat perilous. We also stopped for target practice every day.

However, we finally arrived at Santiago de Cuba, and immediately reported to General Shafter, who remarked that our coming was a "God send."

He sent us to Siboney, about eight miles from Santiago. Our arrival there filled the hearts of the overworked physicians with joy, and the sick with courage when they saw our immense hospital tents, and food supplies appropriate for the sick in such a climate.

Digitized by Google

Major LeGarde was in command and a grander gentleman was never born, courteous, kind, considerate, indefatigable in his efforts to afford us every possible means of comforting the sick and relieving the terrible distress existing there; he endeared himself alike to soldiers, citizens and physicians.

The physicians already there were exhausted by overwork, and the relief we brought no doubt saved many of their lives.

There was never any lack of medical supplies; we had food in abundance; the volunteers may have missed their bread and butter and observed an absence of mother's hot rolls, but their sorrow could not have been great or their regret lasting in the presence of canned fruits, splendidly prepared soups of all kinds, the best of nursing and the unremitting attention of the most devoted staff of physicians and surgeons ever detailed for such service.

We used but little meat in the hospitals, the refrigerated beef was tainted, due doubtless to the climate. While my experience with canned beef will not permit me to speak of it authoritively, we were so rarely out of any essential article of food or medicine that little suffering resulted from that cause.

Shortly after the wounded were removed the epidemic commenced in earnest; the sick came in by the acre, and it was deplorable to see the excellent, but broken down men, hopelessly discouraged by disease, who but a few hours before would have gone through hell at the command of their superiors.

Never was there a finer army assembled in the world, their intelligence, their generosity, their unselfishness was only excelled by their unparalleled bravery.

Prognostications by distinguished men had been made that our army would be ravaged by yellow fever, and I am certain that owing to the great care taken by doctors many cases that were at first regarded as yellow fever turned out to be thermic or malarial fevers. This mistake was not due to an absence of knowledge of the disease, but showed the great thoroughness and unusual precautions employed to prevent its spread, far more to be dreaded then spanish bullets.

Digitized by Google

The presence of albumin in the urine was sufficient to create a suspicion, while a very high temperature was regarded as pathognomonic and to such an extent had this course been pursued, that it was reported in the United States that over 3000 people had yellow fever at Siboney, while I believe I am correct in stating that there was at no one time 200 cases, the low death rate which was not more than 2 per cent. will show that I have not underestimated the number of cases. It is proper for me to say here that the low death rate from all causes is most remarkable and can be accounted for only by those who know of or assisted in furnishing the excellent care each and every soldier received. To Dr. Nancrede is due great credit for the excellent and skilled attendance to the wounded; his memory is enshrined in the heart of every man who had the good fortune to come under his care, and it is a fitting testimonial to his greatness to say that his name and the history of the Cuban campaign are indissolubly united.

The work performed by all entrusted with the care of the sick and wounded was of collosal character, and in no instance did I observe the slightest disposition on the part of any one to shirk a duty however distasteful. Major LeGarde fell ill and was sent home. He was succeeded by Major Gorgris, a gentleman of high attainments and most affable manner. He also became sick, in fact his life was despaired of and he too had to be sent home.

In fact I was the only physician who was not at some time on the sick list while there, and though on the point of collapsing I stuck it out at the expense of thirty-three pounds of flesh.

Nurses suffered equally with the rest from the epidemic and some times sixty per cent. were on the sick list at one time. I cannot speak too highly of the services rendered by the nurses. I found them at all times obedient and willing, sympathetic to a high degree.

The 24th infantry regiment, a colored regiment, was detailed to aid in caring for the sick. They were a splendid lot of men, and under the command of the gallant Major Mark-

Digitized by Google

ley, did good service as long as they kept well, but they were stricken down in large numbers, and we were soon left without sufficient help. At my suggestion Cubans were employed to do police work around the hospitals, and Cuban women to do the washing. Their services were invaluable. We had also several Cuban doctors, very bright men, mostly educated in the United States or Europe. Having a knowledge of the Spanish language myself I became very intimate with them, and they gave me many pointers.

The department has been unjustly criticised for not returning the sick to their homes at an earlier date. It must be remembered that nearly all who were ill at first were supposed to have yellow fever, and General Shafter believing this to be the case decided that it would be highly imprudent to introduce this terrible disease into this country, but when convinced that it was not an epidemic of yellow fever he made the greatest possible haste in hurrying the sick to their homes in the north.

The first transport took 370 from our hospital, and a happier lot of sick men I never saw, some cried with joy. We regretted to hear that some suffered on the transport while en route. Others had relapses and some died at Montauk Point, others more fortunate reached their homes, and time and care have restored them to perfect health. None will ever forget their experience in Cuba, few will care to repeat it, but from my knowledge of the American soldier gained by an association of the most intimate and confidential nature, I am prepared to say for them that the government has only to ask to obtain the services of the bravest and best men enrolled in any army at any time and under any circumstances.

The great majority of the cases we were called to treat were malarial in origin and readily yielded to quinine. The cases of sunstroke were more intractable, and required constant and unremitting care. The cool nights incident to the tropics were God sends to those poor fellows, as the evening advanced and the day declined, an observable improvement would take place. They would regain consciousness, be able to take nourishment, only to again relapse into unconsciousness

Digitized by Google

when the sun returned. But the night gain was greater than the day's loss, and most of these cases recovered sufficiently to be sent home, their perfect recovery being somewhat in doubt, and when the pension rolls are published and revised, it will be found that the great majority who suffered sunstroke in Cuba are invalids, hopelessly and permanently.

Typhoid dysentery I believe caused the greatest number of deaths, and in this terrifically tropical climate was intractable to treatment, its course rapid and the end death.

The treatment of malarial fever was that usually adopted in the United States, and the typhoid cases usually received the same treatment that such cases would receive in the hospitals of New York City.

It was different with yellow fever, every one had his own ideas as regards the treatment of this disease, and it is safe to say that no two physicians agreed absolutely upon any specific course. Dr. Echeverin, an eminent Cuban physician, treated all cases with magnesia sulph. and water, allowing no food for several days. This course for a short time was practiced by other physicians, but soon abandoned for a more rational course, and I am sure a more scientific and satisfactory one. Salol proved very valuable, but we had no specific.

When suppression of urine and black vomit occurred, I believe that no such case recovered. Good nursing proved the best remedy. A treatment conducted on general principles, a careful diet. Depriving such patients of food was not a success; a rational and wise course, it seems to me, and at least was successful in my hands, was to treat the case according to circumstances and indications as they arise. We have much to learn about yellow fever, and no doubt the brilliant workers in that field will soon be able to furnish us with facts and data that will place our knowledge on a firmer basis, and render this disease, a disease of squalor, poverty and vice, not only amenable to treatment, but thoroughly under our control.

We had eminent scientists in our camp investigating the character of this disease, notably Dr. Agromonte of New York, especially detailed by General Sternberg. I have not

Digitized by Google

yet learned the results of his investigations, or the conclusion arrived at, but the care with which they were conducted and the great intelligence of the gentlemen making these investigations promises to add much to our knowledge of the disease.

Dr. Guterias was there for a short time, but I did not have the pleasure of meeting him.

I wish to say in conclusion that no army suffered so much in so brief a period of time, and with so low a death rate as the United States army in Cuba. No men ever bore suffering with less complaint than this same army. In the presence of such heroism the physicians and surgeons performed their work. There was no time or desire to discuss theories or practice. We were a devoted staff of brothers in the healing art, working alone or together as the case demanded, no jealousies, no desire for personal advancement, no motive, except to do our work well and glorify the prince of gentlemen—our commanner, General Sternberg.

Digitized by Google

DISCUSSION.

DR. J. A. KING, Manistee: I did not have the pleasure of hearing the whole of Dr. Newkirk's paper, and I am very sorry that I did not. I do not understand whether the author took the ground that we had or did not have yellow fever in Santiago province last year. As a matter of fact I wish to say, as a man who was there from the first day of July until nearly every regiment was shipped away, that I have very little confidence in the opinions of experts on yellow fever and their power to diagnose the disease at all. I have been informed by one expert that we had yellow fever in a good many cases, and in a very few days I have been informed by another equally notorious and well-known expert, that we had malarial fever. Whether we had any yellow fever there or not, I do not wish to express my opinion. We had the vomiting and the backache, the sudden accession of fever, low temperatures, subnormal temperatures, jaundice and all that sort of thing. We had it with malarial fever and we had it with any other fever that we may have had there. The patients got well under quinine and they got well under bicarbonate of soda and mercury. The whole thing is shrouded in mystery. I consider the diagnosis of yellow fever (speaking from the standpoint of a common country doctor, who was there all the time on the field of duty, not having lost an hour) as entirely in a state of absolute and utter confusion. I think there is not an expert in the United States who knows whether we had yellow fever there or not. Of course I do not pretend myself to know, but from the fact that their own diagnoses were diametrically opposed to each other, over and over again, I am led to believe that none of them knew anything about it. From my two months experience in the tropics last year I think there will not ever come

Digitized by Google

a time when we can diagnose yellow fever with any kind of certainty, until the bacillus is discovered and definitely isolated, and it can be done in a scientific manner. The vomit, as I said, comes with malarial fever apparently, with cases that yield readily to quinine; and so does the terrible pain in the back—pain so great that if you touch the patient or make the least effort to turn him from one side to the other he will emit the most pitiable and heart rending yells, which can only proceed from most absolute and acute human suffering. Yet the whole case will yield to quinine. And they may get well from so called yellow fever treated only with quinine, and quinine could do them no good—and there you have it.

I had a thousand men under my charge, part of the time alone, as my assistants having died or being sick, and I had a great deal of experience with fevers. I had for years given up fevers and taken to surgical work as my main work, as far as I was able to do so in a general practice, and when I went down there I was not very much interested in fevers, but I became very much interested, and, studying the matter clinically, solely, I became thoroughly convinced that there is but one way to diagnose yellow fever and that is to find the germ and then diagnose it scientifically. I do not believe they knew or anybody knows whether we had yellow fever there or not. My own impression is we had a hard type of malarial fever and not a single case of yellow fever—and yet I may have had a hundred cases of yellow fever and not have known it.

As far as the influence of the night air is concerned that was mentioned, it is very true that the cold night air was very grateful, but at the same time soldiers lying there as they did night after night upon the ground, which was always wet, rain falling every afternoon, a heavy shower perhaps lasting only a few minutes or perhaps lasting nearly an hour, the ground on the field was always saturated (Dr. Newkirk was at Siboney, at the hospital, while I was at the front where the men got the malaria, not at Siboney), they got their fever at night, they breathed the night poison all night long, and although their temperature went down, they only got a fresh dose of

Digitized by Google

malaria, to be rendered inert by a dose of quinine the next day. The only way to treat those cases was to give them a dram of quinine. In those anæmic cases, where under a microscope, as I was assured—of course I had neither time nor opportunity for microscopic study myself—25 per cent. of the red corpuscles of the blood would be destroyed, the only way you could save your patient was by getting into the system in the next twenty-four hours big doses of quinine, either sub-cutaneously, inter-rectally or in some way, providing only that you get the dose in and that the doses were large enough. Quinine was the principal thing that saved anyone down there, in my opinion.

DR. SPENCER, Grand Rapids: It seems to me we are hardly prepared to discuss a paper of this character very much, or at least to criticise it, from the fact that most of us have had very little experience with this type of fever. I rose to my feet mainly to compliment the writer of the paper on the able and very vivid description he has given us of his experience there, enabling this society to have spread upon its minutes something that will become a part of the history of that war.

I have also been interested in the discussion by the first speaker, Dr. King, who was also there, and in learning from him, what doses of quinine were required.

I had seen in the secular press that our surgeons, when they first went there, had to learn from the natives (the Cubans) how to give quinine, and that doses, such as we give to break up our malarial fevers here in Michigan were entirely inadequate there, and, as the doctor says, he found that nothing less than dram doses were of any value. Hence, I feel like thanking the doctor on behalf of this section, who has so ably presented the medical history as he saw it.

DR. NEWKIRK, Bay City: I should like to state to my friend Dr. King, that I had a very large experience with yellow fever in 1871, being where 2,100 people died in 35 days. I do not think there was as much difficulty in diagnosing it as the Major thinks. He is exactly correct in stating that there was very little yellow fever in Cuba and that nearly all the cases yielded to quinine. As large doses as one dram I did not hear of

Digitized by Google

where we were. We were down at Siboney, where he says there was no malaria.

We had the flower of the army there, the 33rd Michigan and the 24th U. S. Inft , but we gave no such doses of quinine as that. Many cases were diagnosed as yellow fever, where a postmortem revealed a great enlargement of the spleen, an organ not affected in this disease, plainly showing the malarial origin. I took strong grounds and maintained that no case could be called yellow fever, without evidence of yellowness before or after death. The old colored nurses from New Orleans could recognize it at once, one of them told me she could go into a hospital in the dark where there were 300 sick, and if there was one case of yellow fever, she could pick it out by the smell, and I believe she could. I have had some experience with yellow fever, having been in the epidemic that afflicted the city of Buenos Ayres in 1871; the epidemic lasted 35 days and 26,000 people died. I believe I can diagnose it much better than describe it. Bacteriologists have bewildered physicians, instead of enlightening them on the subject.

Dr. H. M. King, Grand Rapids: I am unfortunate in that I was not present to hear the original paper, but I am very much interested in the discussion that has taken place on the subject. Having had some experience with yellow fever and pernicious fever, and having myself had a fever which was diagnosticated as yellow fever by one of the most experienced physicians in Rio Janeiro, but which afterwards yielded very kindly to quinine, and seeing a very fatal epidemic of yellow fever in Santos, and having on the ship in which I happened to be stationed at the time a number of cases which I had every opportunity for studying, I do not agree with the last speaker at all. That there are certain characteristics of yellow fever which are unmistakable after they appear I do not question, but that many cases of yellow fever will go to a fatal termination and only at the autopsy the true nature of the disease be known is an acknowledged and very frequent occurrence. In South America a pernicious malarial fever, without a pronounced rigor, where there is a distinct yellow

Digitized by Google

discoloration of the skin, attended by black vomit, by a very pronounced albuminuria, might very well be mistaken for yellow fever by physicians even when experienced in the disease, and I will admit freely it has fooled me many times and I do not feel at all certain today that many of the cases which I saw and treated under the advice and with the counsel of eminent Brazilian physicians, which recovered and in which consequently we had no opportunity for post-mortem, were yellow fever cases. I am convinced that except it be in the hands of an expert or except the æstivo autumnal parasites be demonstrated in the blood, that many cases of yellow fever would be treated as pernicious fever and vice versa. I do not agree with the last speaker that there can be no mistake in diagnosis between the two diseases.

Dr. J. H. Reed, Battle Creek: It is not my desire to enter into the history of yellow fever; I have had considerable experience with it myself. In 1873 and 1878 I was all through the epidemic in New Orleans. In 1878 I worked in the First district under the Howards. I also visited Havana, Santiago, Rio Janeiro and other points in South America during the time it was epidemic, but in New Orleans I will speak of it particularly. It is an easy matter for the physician who is in constant contact with it to diagnose the disease, but that comes principally from experience with it and can often be confounded. As a matter of fact, from 75% to 80% of cases of yellow fever recover with good nursing anyhow. A great many physicians during the epidemic would often send in some of the old colored nurses and predicate their diagnosis upon the statements of the old negro nurse and then, if their cases got well, they were "dangue" or "breakbone," and if they died, they were yellow fever.

The speaker who has just taken his seat has spoken in regard to black vomit. Dr. Guiseras and other authorities have taken the ground that no case of genuine black vomit ever got well. I must confess, that in my experience I have never seen a case get well, but I have heard of several that have (?). The symptom of yellowness often occurs before death and sometimes after death, and the same thing has occurred that

Digitized by Google

Dr. King has just described, that very often a case of malarial fever has in death been described as yellow fever, when it was not. Again, Dr. King says that during the epidemic in Cuba they gave quinine in one drachm doses and the symptoms responded to treatment; to my mind, this is positive evidence of malarial fever peculiar to the tropics, which is further evidenced by the statistics which show that only five per cent. of the cases were yellow fever. In yellow fever, I seldom, if ever, gave quinine.

I simply mention these little things as experiences of my own.

Digitized by Google

REPORT OF A CASE OF MARKED DISTURBANCE OF THE DIGESTIVE TRACT CAUSED BY AN UNDEVELOPED UTERUS.

J. N. MARTIN, M. D.,
Ann Arbor.

Miss S., aged 21, had been in school most of the time since 7 years of age. She was well as a child, and until 16 years of age, when she began to have, about monthly, periodical disturbances, manifested by pain in the back and pelvis and fullness in the head, with disturbance of digestion. These attacks were accompanied by a mucous leucorrheal discharge, which, once in two or three months was slightly tinged with blood, for a day or two.

The most prominent feature was the extreme derangement of the digestive tract for a week each month; this began with nausea which continued from twelve to thirty-six hours, and was succeeded by vomiting, which occurred at very frequent intervals for from three to twelve hours, and left the patient in such a prostrated condition that she was obliged to keep her bed from twelve to forty-eight hours after the vomiting ceased. She could take but little food of any kind for from two to four days following; then her appetite returned and her digestion was apparently good for two and a half or three weeks, or until there occurred a repetition of the symptoms and derangements.

After nearly four years of these attacks, occurring eleven or twelve times yearly, the patient came to me for consultation and treatment. She had taken much medicine and with re-

Digitized by Google

sults decidedly unsatisfactory; she had become very nervous and the attacks were much dreaded.

At that time she seemed fairly well developed generally, but there had been no show of blood from the genital canal for over four months.

Upon examination I found the external organs normally developed, the ovaries were of normal size and shape but the uterus was infantile; its interior measured one and a half inches, and was as small in all of its other diameters; the uterine canal would admit without difficulty a medium-sized uterine sound.

I advised stimulation of the uterus by pelvic massage, three times weekly; at the end of three weeks she had a menstrual period with a fair flow of blood for three days, accompanied by nausea for four or five hours but no vomiting; as she expressed it, "there was ten times more flow with one-tenth of the amount of disturbance."

Six weeks later another similar period occurred with about the same character and degree of derangement as with the first, but not so long continued. Four weeks later there was another period with a freer flow, slight nausea and no interruption from school work. The following periods occurred once in four or five weeks with but slight inconvenience. At the end of six months she said she was well and indeed looked well, and the massage was discontinued. No medicines of any kind were administered, and no other treatment was given.

At the end of a year and four months, the interior of the uterus measured two and one-fourth inches, and all its diameters had increased in about the same ratio.

The results in this case more than met my most sanguine expectations, after having noted the slower favorable changes in several other similar cases. I would add that I advised the patient to take extra precautions against exposure to cold at the time of her periods.

This I admit is an extreme case illustrating a class of patients that the general practitioner often sees before the gynecologist; there are all grades of disturbances with these

Digitized by Google

patients, ranging from the very slight to the most severe, according to conditions. I have seen several patients with undeveloped uteri and have noted with interest their peculiar liability to interruptions of the functions of the trophic centers. I have also noted the tendency to vicarious menstruation, to disturbance of vision (even producing blindness in a few cases), besides many other derangements, such as nervous disorders; they are most often found among school girls whose mental development is too often urged at the expense of symmetrical physical development and are difficult to relieve without entire change of habits.

Not only do we observe these derangements when the reproductive organs are undeveloped, but also when they are deformed and some obstruction exists.

Puberty is a most rapid developmental period, and is liable to go to extremes; the girl's physical development, at this time, needs most careful supervision.

Digitized by Google

PROGNOSIS OF PNEUMONIA IN ITS RELATION TO THE ETIOLOGY.

HERBERT MAXON KING,
Grand Rapids.

The clinical picture presenting in acute lobar pneumonia is one so constant in its essential features, while its pathology is so comparatively undeviating that a single well-defined case may be taken as a type from which variations are few and unimportant. Its pathologic aspect is clear, well-defined and characteristic, and in that sense, pneumonia is always one and the same disease, whether primary or secondary, mild or severe, or whether terminating by crisis, or lysis, recovery or death.

For this reason, I think, we have come to base the prognosis too much upon the physical condition and environment of the patient; and too little upon the etiology of the disease, which, it is scarcely necessary to demonstrate, is by no means always one and the same.

Pneumonia is a term applied to a pathologic condition, the chief and characteristic lesion of which is found in the lung. It was employed to denote an acute lobar consolidation before the bacterial origin of such a condition was discovered, and it is unfortunately still employed indiscriminately to describe a pathologic process. which, however uniform be its morbid anatomy, is not at all so in its causative factors.

It is time therefore, it seems to me, in the light of present knowledge, that we cease to apply this term to all acute lobar consolidations; or, better still, that we—continuing to use the term purely with reference to its characteristic anatomic le-

Digitized by Google

sion, shall in every case modify it by a proper adjective to denote the true nature of the disease process as it relates to its etiology. In other words, that we shall name each pneumonia for its ultimate causative factor so far as it is possible. As for instance, "pneumonoccic" pneumonia, "streptococcic" pneumonia, "influenza" pneumonia, etc.

I maintain, that it is just as unwarrantable to neglect the exact determination of this feature in pneumonia, as it would be in a case of suspected phthisis. Indeed, the steps necessary to be taken for this end are equally simple and very similar in both phthisis and pneumonia.

When this proceedure shall have become a common practice, the prognosis in lobar-pneumonia will cease, to a very large extent, to be based upon "personal equasion", and we shall be eminently better qualified to estimate upon the probable course and outcome of the disease. Moreover, the knowledge thus added at the outstart, will no doubt, simplify and make more exact the treatment of the individual case. Vital statistics, when compiled with this feature in view, will have much more meaning, and for their practical application, they will possess a much greater value to the Sanitarian.

It is my object here however, simply to point out the importance of ascertaining the nature of a pneumonia with relation to its etiology for the purpose of more accurately prognosticating the issue in every case.

In illustration of this point, permit to cite briefly from my records of several typical cases, among those which have come under my observation since having this feature in mind.

CASE I. Male between fifty and sixty years of age, farmer by occupation. The history of the attack was typical. After a hard day's work--during which the patient felt as well as ever—he was suddenly taken with a severe rigor, followed by "brick dust" expectoration in due time, great prostration, and at times, a low delirium. Toward the end of the second week the temperature became remittent, with afternoon exacerbations and occasional sweating.

Digitized by Google

I saw the case in consultation, early in the fourth week, in the afternoon. The temperature was 103° F.; pulse, 110. Complete dullness over lower right lobe, less marked over middle lobe, and quite preceptible over left lower lobe, vesicular murmer lost in middle right and lower portion of lower left lobes and no respiratory sounds whatever to be heard over lower right lobe. Expectoration profuse, dirty brick dust color. Urine non-albuminous, responding negatively to Ehrlich's "diazo test".

Microscopic examination of sputa, demonstrated the presence in enormous amount of the pneumococcus of Frarnkl, with practically no other microorganisms. (This was rather unexpected in view of the remittent character of the temperature and the sweating, which suggested sepsis.

The diagnosis, based upon the findings, was *acute pneumococcic, lobar-pneumonia*, and the prognosis was very favorable for complete recovery—provided a secondary streptococcic, or other pyogenic infection did not occur.

If seen early in the course of the disease, such a prognosis could not safely have been made, for it is in these pneumonias that death on the eighth or twelfth day from acute toxaemia occurs, but, having survived the first shock, the outlook for recovery was favorable.

I have since learned that convalescence was slow, but uneventful and complete.

CASE II. This case was under my own observation from the first, so that I had excellent opportunity for complete investigation: Female, twenty-eight years old, had been under observation and treatment for pulmonary tuberculosis involving left apex for two months prior to onset of pneumonia. Was feeling ordinarily well, and able to attend to her usual occupations. After two days of slight indisposition and moderate elevation of temperature, a sharp rigor and rise in temperature to 105° F. Pain in left chest, dyspnoea and prostration marked the onset of an acute lobar-pneumonia, involving whole of left lung. Consolidation was the most complete I have ever seen. There were absolutely no respiratory sounds, except a bronchial tubular breathing which came to

Digitized by Google

the ear with a metallic, almost musical sound. Cough and expectoration were almost entirely suspended. Exploratory aspiration showed no fluid in pleura or lung. Cyanosis of lips and nails were marked. Passing over irrelevant details of the case, crisis occurred on the thirteenth day, with distinctive improvement in subjectlve symptoms following immediately, and a return to some extent of the cough, which had been absent since the initial chill. Expectoration was, however, very scant. A glarry mucous, in character containing tubercle bacilli in "clumps", resembling pure cultures in arrangement, and no other microorganisms demonstrable in coverglass preparation.

Within a few days the expectoration became muco-purulent and the tubercle bacilli gradually lost this peculiar arrangement, but were the only organisms found in the expectorated matter.

It is of interest to note that prior to pneumonia, cough was a persistent symptom. Expectoration was much more profuse and more purulent in character, while the bacilli were more scattered throughout the specimen.

With the supervention of the typical pneumonia, I was prepared to find a secondary pneumococcic infection, but as soon as expectoration was procurable, the diagnosis of acute tubercular lobar-pneumonia was made and a prognosis favorable, so far at least, as recovery from the pneumonia was concerned —was allowed. It is in such a pneumonia as this however, whether preceeded by evidence of pulmonary tuberculosis or not, that one is most apt to get hydrothorax as a complication, and indeed, a serous effusion into the pleural cavity, occurring in the course of a pneumonia may be taken as proof positive of the tubercular nature of the pneumonia just as a purulent effusion in the course of pneumonia may be taken as evidence that the pneumonia is due, if not entirely, at least in part to infection by pyogenic organisms.

In the case in point, resolution proceeded slowly, but uninterruptedly, and the lung cleared up, leaving the patient no worse off than she was before the pneumonia. Subsequently

Digitized by Google

however, a serous effusion into the plural cavity occurred and about three pints of fluid was aspirated.

CASE III. Female, about thirty-eight years old. A protracted, difficult "placenta-previa" labor was followed, at some interval, during which septic fever occurred (the history obtained was indefinite and vague) by phlebitis, and ten days after labor by the initial symptoms of acute lobar-pneumonia, involving the two lower lobes of the right lung. This pneumonia ran an irregular course for three weeks, when abscess and necrotic changes became evident, and I saw the case for the first time. The breath was horribly foul; the expectorated matter contained shreds of broken down lung tissues, puss and the usual abscess detritus. The chief micro-organism found besides the saprophytes—always present in such conditions—was the streptococcus pyogenes in chains of from ten to thirty elements.

There were no pneumococci influenza, or tubercle bacilli. The case was, therefore, one of acute streptococcic lobar-pneumonia, probably originating in a septic thrombus from the involved veins in the extremities. The prognosis when I saw the patient was favorable for recovery, without serious complications or sequelæ.

Had a bacteriologic examination been made before the formation of abscess, I have no doubt streptococci would have been the prevailing organism found. The prognosis then could have been made with fair degree of certainty, as follows: favorable for eventual recovery, with the probabilities, however, in favor of abscess, or empyema, as complications and more or less impairment of the lung as a result.

Of course, necrotic changes occurring in the course of streptococcic pneumonia cannot ordinarily be forseen. Gangrene, rupture of pus sac into pericardium, or peritoneum, etc., must be regarded as *accidents* which cannot fairly enter into consideration in the prognosis of such cases.

In the case in point, however, originating as it did, presumably from a thombus, necrosis was to be expected.

This patient lived up to my expectation and is at present

Digitized by Google

quite well, although convalescence—as might have been expected—was tedious.

CASE IV. The last which I shall cite in illustration, is also one in which I have enjoyed excellent opportunity for study. Female, between fifty and sixty years of age, appeared with symptoms of a bad cold, congestive rhinitis, dry cough, pain in head, back and legs—some rise in temperature and pulse-rate with slight rigors. For two or three days these symptoms continued, the fever increasing with great prostration, and on the fourth day, a more severe chill with temperature 103-5°, was followed by the appearance of physical signs of lobar-pneumonia involving lower lobes of both lungs. The cough which had been dry and persistent heretofore, now became productive of a muco-purulant expectoration which contained in great abundance Pfieffer's bacillus of influenza, with no other micro-organisms in sufficient number to be characteristic, and no pneumococci at all.

The diagnosis thus established at the very start was acute influenza lobar-pneumonia, and the prognosis was of necessity guarded, but on the whole, favorable. The case pursued an irregular course, uncomplicated by other infections. Consolidation gradually disappeared, there was no crisis, and a tedious and protracted convalescence left the patient in a deplorable nervous condition.

There was during the course of this pneumonia, no pleuritis, and of course, no tendency to effusion, indeed I have never seen the pleura affected in uncomplicated influenza, and do not believe such complications ever arise without other infection than by Pfieffer's bacillus.

This is a broad statement, but one which I think will be borne out by observation. Many cases of pleuro-pneumonia, so called; pleuritis—dry and with effusion, are reported as "Grippe" complications, but so far as my experience or information goes, these complications arise from multiple infections, made more easy no doubt by the depletion of the system by true influenza toxaemia, but never directly due to Pfieffer's bacillus which we must admit as the sole origin of this peculiar toxæmia.

Digitized by Google

In these illustrations, I am aware that some objection is reasonable on the ground that such single infections are not the rule and that the great majority of pneumonias not dependent upon the pneumococcus are muitiple infections. Moreover, many pneumococcus pneumonias, especially those running an irregular course, are, no doubt, cases in which from the start, or at some time subsequent to the initial chill, there is infection by more than one organism, but I have purposely chosen these cases of single infection to better illustrate the point, and while any pneumonia may present, in a sputum examination, several varieties of pathogenic organisms. There will always be found a *predominating, and so to speak, primary* germ, upon the natural parasitic history and pathogenic properties of which, will to a very large extent depend, the prognosis of the disease.

The cases cited then are typical, and will, I think, be found safe guides as far as they go. There are, no doubt, pneumonias which do not fall into any of the classes mentioned. Further study, with this idea in view, by many observers, wil' be necessary not only to make prognosis in *such* cases a more definite matter—but to place a clinical value upon my own experience, and corroborate or falsify my conclusions.

First, then, in conclusion, a pneumococcus pnemonia occurring in a previously healthy individual under sixty-five years of age, tends to recovery by distinct crisis, runs a typical course, is not complicated by pleural effusions, and, in cases which recover, does not permanently affect the integrity of the lung or cause abscess or gangrene. On the other hand, it furnishes by far the greatest pneumonia mortality—and death, in the fatal cases, is due to acute toxaemia.

Second. Tubercular pneumonia, occurring either as the initial stage of pulmonary tuberculosis, or in the course of the latter disease, runs an acute and oftimes an alarming course, is more irregular in its development, may terminate by crisis as distinct as that in pneumococcus pneumonia or by gradual subsidence, *is not attended by suppuration*, either in the lung or pleura, may, however, produce pleuritis, dry or with profuse serous effusion, is seldon, if ever immediately fatal, and

Digitized by Google

it is doubtful if its remote results, upon the general tuberculous process, are harmful.

Third. Streptococcic pneumonia (including all pneumonias dependent upon pyogenic organisms) forms a large proportion of all pneumonias, runs a very irregular, prolonged and atypical course, is always the class in which empyema, abscess or gangrene of the lung is to be feared, is the pneumonia in which septic complication in other organs is to be looked for, and, in recovering, often more or less seriously impairs permanently, the integrity of the lung or pleura.

Fourth. Influenza pneumonia, if uncomplicated, runs a shorter course, in which less marked disturbance with the body temperature, is associated with much greater disturbance of the vaso-motor nervous system, and profound prostration, does not tend to termination by crisis, does not involve the pleura, nor of itself permanently affect the integrity of the lung, is seldom of itself fatal; but, on the other hand, this class of pneumonias, more than any other, predisposes the lung to infection by other pathogenic organisms, among the more frequent of which, (probably because of their omnipresence) are the streptococcus and tubercle bacillus; consequently, this pneumonia is, more than any other, subject to complications and sequellae arising from multiple infections.

When the bacteriologic examination relegates a pneumonia to its special class, then a prognosis may be safely based upon such general principles as I have endeavored here to outline, guarded, of course, by the condition that it shall remain within its special class, and subject to such modification as subsequent examination (which it is needless to say, should be frequent), shall demand.

It must be remembered that while almost every pneumonia sputum is likely to present many varieties of microorganisms, there will be *one* variety, which prevail in such predominance as to enable the physician to classify the case, and, with the exercise of sound judgment, to prognosticate its issue with a fair degree of certainty.

Finally—I have purposely avoided citations from the prodigious amount of literature on the subject of prognosis in

Digitized by Google

pneumonia, first, because in such a paper as this, to be read before a society, the chief object to serve is that of exciting a full discussion, an object which is too often defeated by tedious and unnecessary annotations and references, consuming time which could otherwise be given to discussion; and second, because in the literature to which I have access, I have failed to find anything which takes up this subject from the point of view, which I have endeavored to assume.

Digitized by Google

DISCUSSION.

DR. CRANE, Kalamazoo: I have listened with very great interest to Dr. King's admirable paper and I think he has chosen the only true means of distinguishing the different kinds of pneumonia. It seems as though such a procedure would not only be of value in prognosis but that it might be of great value in the future as a means of deciding upon a plan of treatment. If the serum treatment of pneumonia is to be a success, the kind of infection will have to be understood before the kind of serum can be chosen. Thus in a streptococcic pneumonia we would have the anti-streptoccocic serum, and in the tubercular pneumonia, if the anti-tubercle serum is to be a success, that is the serum we want to use, instead of the anti-streptococcic serum. Thus I should think that the doctor's researches would have a bearing on the future therapy of pneumonia.

There is one point, however, which might be stated and that is the difficulty in making a diagnosis even to the expert. For instance, it is rare to find a sputum which does not contain some streptococci; it seems to be present almost invariably where there is an expectoration from the bronchial tubes. The extreme difficulty in identifying the influenza bacillus would also be an almost insuperable objection to this form of diagnosis, for other laboratory workers, although I have no doubt Dr. King has done it successfully.

DR. JENNINGS, Detroit: I did not intend to discuss the paper, but not from the fact that I did not recognize the very scientific character of it, for it has impressed me with its excellence. Dr. King has expressed views that have been forced upon me by clinical observation and a study of the etiological character of pneumonia so much as it is developed at the present time. I think that one who has had a clinical ex-

Digitized by Google

perience extending through a large number of pneumonias of different types cannot have failed to recognize that according to the character of the primary and the secondary infection will depend the prognosis. We have learned that the prognosis of pneumonias complicating measles, scarlet fever or diphtheria is grave. Bacteriological investigation has shown that those pneumonias are usually streptococcus infections, either pure streptococcus infection or mixed infections. The pneumonias of diphtheria are found to be rarely pure Klebs-Loeffler infections, more frequently combinations of Klebs-Loeffler and streptococcus infections; perhaps more rarely still combinations of Klebs-Loeffler and pneumococcus infections. The prognosis of these pneumonias will depend, as Dr. King has very well pointed out, upon the character of the infecting organisms. He pointed out also the fatal character of the Pfieffer's bacillus lung infections, the influenza pneumonias. The influenza bacillus produces a pure infection, a pneumonia that is not attended by secondary infection. Many of the influenza pneumonias, however, are multiple-infections and according to their multiplicity is very frequently the gravity of the prognosis. That question, as Dr. King said, has not yet been well worked out. The difficulties, as my predecessor remarked, of bacteriological diagnosis, are sometimes great, but ordinarily a bacteriological diagnosis can be made. The line of the paper is thoroughly scientific and is a forecast of the factors upon which the prognosis of pneumonia will be made in the future.

Digitized by Google

CONTAGIOUS CUTANEOUS DISEASES.

ALBERT E. CARRIER, M. D.
Detroit.

Inflammatory infections of the skin that are produced by contagion, differ but little from other forms of dermatitis. Papules, vesicles, pustules with induration, and scaling, and subjective symptoms of smarting, itching, or pain, are the common objective and subjective symptoms of an inflammation of the skin, no matter what the cause may be. A large number of dermatological diseases are recognized as contagious and in many of these the contagion has been isolated. There are other diseases of the skin which are regarded as contagious, but so far the specific virus has not been isolated. There are still other affections, which from their mode of onset, course, and response to treatment, although not at present so classed, will in the near future be classed among the contagious diseases.

Contagion in skin diseases results from the contact of the specific germ, or virus, with the epidermis, or by entrance throug he pilo-sebacious follicle, or sweat duct, or through some solution of continuity, and the resulting disease is always the same in its clinical manifestations, no matter how the contagium is introduced, as the one from which the virus was derived. It is well to remember, however, that contact of contagium does not always result in the development of disease. We can all recall instances where several individuals have been exposed to the same contagium, under the same conditions, and one or more have escaped the disease, and any physician with even a limited experience in the treatment

Digitized by Google

of cutaneous affections, knows of instances of ringworm occuring in a family where there were several children, some of which would escape the disease entirely.

The exanthemata furnish numerous instances which illustrate this statement. It would hardly be a satisfactory explanation of these cases to say that contact of the contagium had not occurred. In skin diseases as in other diseases, there is necessary a proper soil in which the specific virus finds the conditions necessary for the developmcnt at that time of the pathological processes of which that virus is the cause. Absence of this condition is an idiosyncrasy that for the time being protects the individual. This protection at a later exposure may not exist. Given then contagium in contact with cutaneous tissues and we may (with the exception stated) expect the development of the disease of which the contagium is the specific cause. The application of the theory of the germ as a causative factor in the production of dermatological affections has resulted in the isolation of coccogenous, bacilliogenous, and hyphogenous germs, irritation from which has resulted in such well known diseases as furunculosis, carbunculosis, sycosis, ringworm, etc. With the positive knowledge of the causes of these affections has come a better management in our methods of prophylaxis, in the use of measures to prevent the spread of the disease to unaffected portions of the body, or to healthy individuals.

There are other affections of the skin that observers have claimed due to a specific germ, among them purpura, and zoster, but at present these lack confirmation, but it is probable that in the near future, the interest attending the study of micro-organisms will isolate a specific germ for many other cutaneous disorders, and thus place them among the contagious diseases.

The most familiar of the cuntaneous skin diseases are those due to the hyphogeneous germs, such as the trichophyton microsporon, and achorion.

The contagious diseases due to animal parasites, such as the acarus and pediculi, should be easy of recognition, and yet it is no uncommon occurrence to find cases of scabies

Digitized by Google

that have been treated for several months without recognizing the disease, the cases being treated as eczema.

The acarus at the end of the little burrow that it makes when deposited on the skin is discovered in the text books very easily, but I have searched time and again in well marked cases of itch without finding either the furrow or itch mite, but this failure did not alter my diagnosis, and my treatment resulted in speedy cure. The same may be said of the pretty illustrations of the various fungi, they are so plain that it would seem as if the matter of recognition by the aid of lens, or microscope, would be very easy, and in typical cases it may be, but these skin diseases are usually atypical, and the micro-organisms are not so easily found.

In typical cases the irritation resulting from these fungi, or parasites, will be easily recognized without the aid of a glass.

Pustular lesions are common to many cutaneous affections. We find them in syphilis, eczema, sycosis, acne, impetigo, etc. The formation of pus is due to different germs in different diseases, but the lesions will differ but little from each other, and it is difficult, if not impossible, to tell a pustule of acne from a pustule of syphilis, or the pustule of eczema from the pustule of ipetigo, but wherever pustular lesions exist, no matter what the disease may be in which they are found, it is to be remembered that they contain micro-organisms that are capable of developing pustules when brought in contact with healthy skin. At the present time it is a mooted question whether these lesions are a part of the disease in which they are found, or are secondary infections. Is the pustule of variola, or syphilis a necessary lesion of the disease, or are they added lesions which may increase the severity of the disease in which they are found? It is undoubtedly the fact that the specific virus of the several diseases in which they are found has rendered the cutaneous structures less resistant to the ravages of these micro-organisms responsible for pustular lesions. I think that hardly any one will deny that the secondary fever of small-pox is a septic process. In the light of our present knowledge regarding the relation of micro-organisms to the formation of pus, I feel warranted in making

Digitized by Google

the statement that from acne to small-pox wherever pustules exist they are due to these germs or their chemical poison.

Eczema has not been regarded as a contagious disease, and little care has been used in its management to prevent the spread of the disease by contact with healthy individuals. In 1887 Unna advanced the theory that the seborrhœas were the result of germ infection, and he classed them under the head of "eczema seborrhicum." This theory has in part been adopted by many dermatologists, and a well defined pathological process is described in most text books as eczema seborrhicum, and the disease is considered contagious. I believe this to be true, for cases have come under my care where the disease has resulted from the use of comb and brush that had been used by a person suffering from the disease. It is a common matter for several members of a family to use the same comb and brush, while the chain fastened implements of hair dressing of the hotel wash room are used indiscriminately by hundreds, healthy and diseased alike, saying nothing of their common use in the barber shop.

Eczemas not classed as seborrhœic are not classed among the contagious affections, yet Unna claims that they are due to a coccus which he has isolated from the vesicular lesions and a number of later authorities have given their adherence to this view, and the benefit that results from the use of parisiticides in the treatment of cases of eczema adds strength to the theory. The pustular lesions of the disease are undoubtedly contagious.

Acne we have not considered as contagious, but late investigators claim to have isolated a specific germ, or germs, responsible for the disease, being found inside the comedo plug, while the different pus-forming germs are found also in the acne pustule, and these micro-organisms may be the cause of the spread of the disease, at any rate the special germ in this may be considered at present unproven. Ordinary sycosis is without doubt contagious.

Alopoecia areata, so long regarded as due either to syphilis or some disturbance of the trophic nerves will be, in the majority of cases, found of parasitic origin. No other explan-

Digitized by Google

ation can be given for the rapid spread of the disease in barracks, where scores of soldiers are affected, or in orphanages, or schools where a large proportion of the inmates are affected. These cases are probably the result of the common use of brush and comb.

It is evident to all what the bearing upon the treatment of skin diseases will be, if they are regarded as contagious. In the management of syphilis, impetigo contagioso, scabies, ringworm, and favus, caution is given to prevent the spread of these diseases. We prohibit healthy and diseased from occupying the same bed, or using the same towels or comb or brush, etc. We also use parasitic applications to prevent the development of these diseases upon healthy persons, who may come in contact with the sufferers. My purpose in this paper has been to call your attention to the many cases of cutaneous disease that are known, or presumed contagious, and further to those, which from similarity of onset and behavior, give promise in the near future, of coming under the same classification, an early recognition of which will have much to do in the treatment of these cases.

I will venture the statement, that very few general practitioners would caution a patient suffering with seborrhoea sicca to be careful, because his disease may be contracted by other members of the family, or his associates, if they should use anything used in dressing his hair, combs, towels or brushes, yet I am positive, the disease is spread in this way. The wonder is that so few cases result, and can only be explained upon the theory, that the disease requires a special soil for its development. If this caution is necessary in the management of seborrhoea sicca, it is more so in cases of ringworm, or favus. In these latter necessary prophilaxis would require that healthy persons in contact with the diseases should use some parasiticide upon parts likely to be attacked. Frequent bathings of the part with a saturated solution of boracic acid would accomplish this purpose.

In cases of eczema seborrhicum spreading from the scalp over face and neck, good results follow the use of sulphur

Digitized by Google

upon unaffected parts, in preventing the spread of the disease.

In vesicular eczema the contents of the vesicles are capable of developing the disease, when applied to healthy portions of the skin, and care to avoid this must be exercised. During the last two years we have had an unusually large number of cases of skin disease in our dispensary, especially, attacking exposed portions of the body in children, or young adults, and spreading through whole families. The disease was characterized by superficial lesions, isolated, papulo pustular, forming at times dime sized patches, with very little pruritus. Many of these cases had been treated as eczema. These cases yielded very quickly to treatment based upon the theory that they were simply due to infection of one of the pus micro-organisms.

In conclusion: First; That there are any known contagious skin diseases in which a proper prophylaxis is not exercised to prevent invasion of healthy persons.

Second; There are many diseases of the skin that from their mode of onset and behavior, are so similar to known contagious affections, that the same means should be used to prevent their spread.

Third; That pustular lesions, no matter in what disease they occur, must be regarded not only as auto-inoculable, but as capable of developing similar lesions, when transferred to healthy individuals.

The question is simply upon the spread of these milder forms of skin diseases. The cases that I have mentioned we find very frequently in dispensary practice and we find them also among private patients, and I think that any case of skin disease in which pustular lesions exist should be regarded as contagious. When it comes to the question of syphilis, we all regard that as contagious, of course. The evidence of the necessity for care in the prophylaxis of these diseases is shown by the passage of our late legislature of a law for the barber, which requires examination of barbers as to their knowledge of affections which are contagious. It is a very frequent thing or frequently cases occur where individuals come to you from

Digitized by Google

the barber shop with a disease which they claim to have got in the shop. In one barber shop in Detroit nine individuals, one after another, were shaved, and of those six were physicians, and every one of them suffered from a contagious trouble. This was not the barber's itch. In fact we have very few cases of barber's itch—I have seen, I guess, two cases of barber's itch in the last five years—but we have seen a number of cases of this pseudo barber's itch, a pustular lesion spreading over the cheek or chin and doing it rather rapidly, and which yielded to treatment within a couple of weeks.

Digitized by Google

DISCUSSION.

DR. WELLER, St. John's: I would like to ask Dr. Carrier how he would classify these troubles of which he speaks which are not barber's itch?

DR. SPENCER, Grand Rapids: I would like to ask Dr. Carrier to tell in his closing if the seborrhœa is not generally designated among the laity as barber's itch. I have had a number of cases of that kind that I have diagnosed as seborrhœa which they themselves have attributed to having become infected in the barber shop, and they call it barber's itch. I also wish the doctor would say a little more about barber's itch, its appearance and points for diagnosis.

DR. CARRIER: Those cases occurring in the barber shop, where you have rapidly forming pustules, very shallow, attacking both sides of the face, running across the chin and forming on the upper lip, are the cases which I have come in contact with in what I call pseudo barber's itch. The question is whether they are cases of impetigo contagiosa or simply cases which are due to one or the other of the pus germs which I have mentioned. I am inclined to think they are just simply a pus germ infection, that they are not cases of impetigo contagiosa and they are not cases of barber's itch. Barber's itch is ring worm, it is ring worm on the bearded portion of the face. The lesion commences on one side of the face like an ordinary ring worm upon other parts of the body. You will have a very small lesion, maybe the size of a pea, then you will have elevation in the way of papules and minute vesecles with slight scaling gradually spreading until you have the appearance of the ordinary ring worm. The cases usually do not come to us until after that stage.

Digitized by Google

In the case of infection of the hair follicle and hair shaft, you have appearances that are as peculiar to barber's itch as are the lesions or scars of small pox in that disease. With the infection of the hair follicle you have the form of tubercles, deep seated tubercles. In the first place, remember that barber's itch does not attack the upper lip. It commences on one side of the face, and it is very seldom that you will find, until after it has existed for a long time, both sides of the face affected. Now in the hair you take a case of impetigo contagiosa, or take a case of eczema on the beard, you will have the lesions pierced by hairs, but on attempting to remove the hair you will find the pus tube is superficially seated, and does not go down into the hair follicle.

The reverse is true in case of ring worm. The hair is easily removed from its follicle and gives the patient no pain whatever. These tubercules really are multiple follicular abscesses and you will have them varying in size from a pea up to that of a small sized egg. There may be two or three or four of them. They deform the face in very severe cases, in fact deform it terribly.

There is another thing about barber's itch. It does not get well within a month at any rate; a man who can cure barber's itch within six or eight weeks is a pretty successful practitioner in dermatological affections. It is a disease which resists treatment, and resists it for a long period of time. Of course men who are expert in the use of the microscope may be able to detect the trycophaton that causes the disease, some of the lower animals are subject to these parasites or fungi, and I have had two cases in which the disease has been located on the forearm in individuals who have cared for horses. The history that I got from them was that the horse had some affection; they could not tell me whether it was mange or what it was. I haven't heard of it coming from other animals, although cats are affected by it. These cases were very persistent in their lasting and had the characteristics of the ordinary infection due to the ring worm parasite.

Digitized by Google

DR. JENKINS, Tecumseh: I would ask if you have had any experience in using formalin in the treatment of these diseases?

DR. CARRIER: I have not used it at all. The trouble in using any anti-parasiticide is getting it in contact with the parasite. You must remember that the ravages of the parasite are in the hair and the tissues about it and the hair follicles.

DR. STEWART, Battle Creek: What have you found is the best parasiticide?

DR. CARRIER: I do not think there is any parasiticide equal to the bichloride of mercury. Of course it is a difficult one to employ.

A MEMBER: I have used a saturated solution of salacylic acid, that is an alcoholic solution of salacylic acid and I have certainly had good effects with it—better than I have had with the bichloride.

DR. WELLER, St. Johns: May I ask if you have ever used collodion?

DR CARRIER: No, sir. The theory of the use of collodion is that if you can shut off the atmosphere altogether, you can destroy the parasite. I have never used it.

DR. STEWART: I would ask why?

DR. CARRIER: My reason for not trying it is that in any article I have seen, which has reported the use of collodion, I have not been positive that they did what they said they did, or that the disease was what they said it was.

DR. SHOTWELL, Mt. Clemens: I have used it with seeming success.

DR. CARRIER: In what cases?

DR. SHOTWELL: Well, the ring-worm form.

DR. CARRIER: On what?

DR. SHOTWELL: All parasitic diseases.

DR. CARRIER: There are various forms of ringworm. There is a ringworm that would be easily cured with salt and water, as easily as with any of the paraciticides. There are other ring-worms that will not be cured in that way.

Digitized by Google

DR. STEWART: I haven't had very much experience in the treatment of these diseases, but I have had a few cases, and the reason I asked Dr. Carrier why he didn't use collodion, it had been spoken of so much, was that I wanted to know his own personal opinion. From what little experience I have had, in the few cases I have treated, I agree perfectly with Dr. Carrier. Some cases of ring-worm on the bearded face will be cured fairly easy, because the hair follicle is not so deep on some faces as it is on others. But in the cases that Dr. Carrier mentioned, where the pustules are deep, I have found it impossible to get any paraciticide down to those roots, and I confess I almost wished I was a ditcher before I got through with some cases of sycocis. I have heard so many of these things, collodion, formalin and a number of others mentioned, and yet it seems to me the swelling of these hair folliclés, the pustulation taking place in these hair follicles is so close that it is next to an impossibility to get it down in there. I have found a great deal of trouble in getting any paraciticide down in them. These cases that are cured so easily, on the bearded face, there has always been a doubt in my mind as to the diagnosis.

Digitized by Google

PRIMARY SYPHILIS.

RALPH H. SPENCER, M. D.,
Grand Rapids.

Syphilis is due to the presence in the system of a specific microbe. Bacteriologists have announced the discovery of this microbe, but convincing proof of the direct relation between the micro-organism and the specific sore has thus far never been demonstrated. Clinical evidence is, however, as conclusive of its microbic nature as it is in many of the acute infectious diseases. It has been found that acquired syphilis, and inherited syphilis confer immunity against subsequent infection. One could not say that there is no exception to this rule unless one should see the indurated chancre with indolent swollen inguinal glands, followed by a typical roseola and mucous patches. In the absence of these, I should look upon the case as a pseudo chancre, or a tertiary manifestation of a previous infection. It has been my privilege to treat many cases of syphilis during the past ten years, and I can recall but one patient in whom there was a suspicion of reinfection. This was a young man who had been under my care and observation for a period of about three years following his primary sore. He had been without symptoms for a year or more and I dismissed him, supposedly cured. In about six months he returned with what appeared to be a typical hard chancre, and admitted having had coitus with a prostitute some six weeks previously. This being an unusual case, I decided to treat it expectantly, and gave the patient some simple powder with which to dust the sore, and withheld constitutional treatment to await developments. Within a week or two the sore healed, and from that time up to the pre-

Digitized by Google

sent, a period of some two years, there has been no syphilitic manifestation whatever.

METHODS OF CONTAGION.

A convenient classification adopted by some writers is, immediate, and mediate.

Immediate or direct contagion usually takes place during sexual approach, by kissing, by the teeth of a syphlitic, or in the case of the medical man by wounds or abrasions coming in contact with the virus.

Mediate contagion is conveyed, not by direct contact, but by means of spoons, glasses, pipe stems, and articles innumerable upon which the virus may have been deposited. By this means many an innocent person becomes the victim of this disorder, which explains the frequency with which syphilis is diagnosed and successfully treated in patients who can give no history of primary infection, but who are evidently trying to tell the truth. I readily recall two instances of primary infection in the throat, in which I made the diagnosis, the patients having had no sore upon the genitals. Of these two, number one, a young man, had as a tertiary symptom a most obstinate form of palmar squamous syphilide. This patient was under my observation for a period of four years. He has now been free from any symptoms for about one year. Case number two, a young woman, by occupation bookkeeper and cashier, had developed a primary sore on the tonsil, which was seen by at least two specialists in this city, and my diagnosis confirmed. This patient developed roseola before the sore in the throat was healed; under specific treatment the throat symptoms and the rash rapidly disappeared.

Both of these cases denied any knowledge of the source of contagion, though both confessed to some ardent kissing.

TYPES OF SYPHILIS.

One who has seen and treated many cases of syphilis becomes impressed with the fact that some are very difficult to manage and require great vigilance to prevent serious manifestations, whereas other patients with but little treatment

Digitized by Google

seem to suffer no inconvenience, and almost no symptoms of their disorder.

In the mild, or what might be termed benign type, the chancre and inguinal adenitis being the only symptoms, might lead one to doubt the accuracy of diagnosis, were it not proven beyond doubt by the development of teritary symptoms later.

The malignant type is characterized by its acute course, the chancre sometimes resembling phagedenic chanchroid, marked syphilitic fever, rheumatism, and well marked anemia. The eruption quickly becomes pustular, and ulcers form deep enough to leave pigmented scars. Ulcerating gummata appearing in the secondary period are especially characteristic of this form of syphilis. Recurrences following hard upon one another are also typical of malignant syphilis; also early involvement of the bones and nervous system and the viscera are not uncommon.

White & Martin, of Philadelphia, who have published a recent work on venereal diseases, make a statement with reference to the malignant form in which they say, "The disease seems to depend not so much upon the virulence of the infection, as upon the lessened tissue resistance. Syphilis is prone to exhibit its malignant form in the weak, the anemic, the scrofulous, the tuberculous, and in pregnant and nursing women."

Now, my own experience in this form of disease does not agree with the writers above quoted. In the last ten years I have seen and treated three cases that were malignant in their nature, and in each instance the patient was born and brought up in the country, all had good family histories and were themselves the pictures of health until overtaken by this destroyer of the red corpuscle.

On the other hand, I have frequently treated patients who were anemic and tuberculous, and who would seem to have been the worse possible subjects; and their cases have been easily managed, with secondary and teritary symptoms almost nil. My theory for this is that this latter class of patients may be suffering the results of the sins of their fathers, which

Digitized by Google

are said to be visited upon the third and fourth generation, and are thereby partially immune by heredity.

The period of primary incubation varies from ten days to three months, the average being six weeks. As a rule, it is safe to say that any sore that develops ten days after exposure is a chancre. During the period of incubation there are neither general nor local symptoms. There is but little reason to suppose that the virus of syphilis remains localized during this period of incubation, nor do we know that it remains near the point of inoculation. In fact, there is plenty of proof that cauterizing a crack or abrasion soon after a suspicious contact has failed to prevent inoculation. It is very rare that the physician is consulted thus early, but should he be, I would deem it his duty to give the patient the benefit of the doubt, and cauterize or excise the fissure or abrasion. I have done this several times, and as yet have seen no case develop syphilis, neither had I any proof that there had been bona fide exposure. After the period of incubation and at the point of inoculation a chancre developes.

It is hardly necessary to weary an audience of experienced physicians with a minute description of the appearance of a typical chancre. That you can read in the text books. My experience is that the real typical sore as described, has very many exceptions, so that I have come to base my diagnosis upon the history of the case and the future developments, rather than on the sore itself. Frequently it appears as a fissure or an abrasion, or, when located on the mucous membrane, as a superficial ulceration, covered by a grayish false membrane, with but little induration.

Frequently I have seen cases of mixed infection, in which the patient had a multiple sore with the characteristics of chancroid, and within six weeks developed roseola and mucous patches.

Frequently patients present themselves, whose sores have been well cauterized by some other physician, and their appearance so changed as to leave you in doubt as to their true nature. The patients who contract the sore only occasionally know the date of their infection, so you have no guide there,

Digitized by Google

and so in the absence of positive symptoms it has come to be my rule to postpone all constitutional treatment until secondary symptoms develop. This course I have never had occasion to regret, If there is a shadow of doubt about the diagnosis, how much better it is to have that doubt set aside by the appearance of the roseola, before subjecting the patient to a course of mercury. The patient will also stick to his treatment for the necessary time required to cure better than when nothing but the primary sore has attracted his attention. I do not believe that the delay of a few weeks before beginning treatment will make any difference in the future of the case, or be of any disadvantage to the patient.

A word about the treatment of chancre, and I am done. Pages have been written, and long lists of cases tabulated to prove that excision of the chancre would prevent systemic infection. The possibility of effecting a cure in this manner is based upon the theory that the poison, after being absorbed lies latent, just beneath the surface, throughout the period of incubation. This theory is not sustained by analogy. Other poisons absorbed iuto the body seem to be diffused very promptly through the blood. I abandoned excision and cauterization years ago, except when the sore shows a chancroidal tendency. For stimulating the indolent ulcer, I know of nothing better than black wash or dry calomel, and at other times the dry antiseptic powders, bismuth or aristol. Iodoform I no longer inflict upon the patient or the public.

Digitized by Google

DISCUSSION.

DR. CARRIER, Detroit. Dr. Spencer's paper is a good one, and the disease syphilis affects a good many people. The number of papers that are written upon syphilis is an indication of the part that it has in the minds of medical men, and the experience of every practitioner adds to our store of knowledge—gives us a little benefit in the way of managing this disease. I am entirely in accord with Dr. Spencer in the treatment of syphilis, that the sore should never be treated until we have corroberative evidence in the outbreaks upon the surface of the body of one of the syphilides and I would hesitate very much to cauterize or to cut out a chancre. And I will say frankly that I find it at times very difficult to make a diagnosis of a chancre, I have heard medical men in assemblages like this make the statement that they could always tell an indurated sore, be positive in making a diagnosis of a chancre. I have seen quite a number of chancres and diseases of that kind and I have known of men who have had very much larger experience than I have had, who say they cannot make a diagnosis; and often in these *typical* sores we have ordinary inflammatory indurations, which are almost exactly like it. In the entrance of the virus by ordinary means—connection—the point at which it enters may be scarcely discernable and yet be a chancre positive and sure. So that I am not in the habit of treating the sores at all, only by an inert powder, something that will not affect them at all, until corroborative evidence in the syphilides comes to light. There are reasons for this: We do not want to subject an individual to three or four years of medication if he doesn't need it, and most of all is the reason that we want to be positive we have treated that man or woman for syphilis.

Regarding re-infection. Cases are on record indoubtedly of re-infection after an individual has passed through syphilis.

Digitized by Google

and has been thoroughly treated and cured, but they are rare, and those conditions which show at the site of a chancre—what has almost the appearance of an undurated chancre, as it is called—again, are usually the papule, the same as one of the secondary lesions reappearing at the site of a preceding papule—simply an inflammatory condition, with, you may say, the virus of syphilis, whatever it may be, at that point, just in the same way that the ordinary papule of syphilis is formed. We know that it is a deposit of syphilitic virus that makes that papule and the site of the chancre may have caused a predisposition of the individual to the development of the syphilitic virus just at that point, not of a chancre but one of the secondary manifestations.

Regarding innocent syphilis books have been written. I have had two very interesting cases, both occurring in women, in both of whom the lesion was in the throat, and both of them were perfectly innocent. One I went to the pains of examining. She had an unruptured hymen—never had had intercourse of any kind—and that woman will die. She was a fairly robust, hardy woman.

In this my experience corresponds with Dr. Spencer's too—that the individuals who have had malignant syphilis are not weak and puny. I recall an instance of a gentleman in Detroit, who was as hardy and robust young man as I know of anywhere, and yet had an attack of syphilis, in which it seemed to me as though I could fairly see it destroying all the soft parts of his nose and mouth.

Dr. Jennings: What about his drink habit?

Dr. Carrier: He didn't drink at all, he was an exemplary man as far as that was concerned. He didn't smoke.

But this girl had contracted syphilis. She had had sore throat and had been treated by instruments or by applications of some kind, and whether it was as a result of that or how she contracted it I don't know. But I do know that she is going from bad to worse and will probably die. A gentleman asked me about her the other day, who has her under his care now, and he informed me he thought she would not live but a short time.

Digitized by Google

The other case was a woman who had a sore throat and a physician was called to attend her and he said that he thought she was going to have diphtheria. He treated her for a day or two and called in a brother physician in consultation and they pronounced it a case of diphtheria and used anti-toxine. It had no effect upon the sore throat; it got worse. Finally they concluded that is was putrid sore throat and they treated it for putrid sore throat by the application locally and the administration internally of iron, until the woman's stomach refused to retain it. In the meantime her bowels had become very constipated; she hadn't had an operation of the bowels for two weeks. Then syphilides developed all over the body, with large sores the size of a silver dollar, and they sent her to Detroit. In the meantime she had had such difficulty with her heart that they worked over her all one night with hypodermics of nitro-glycerine, etc., to keep her alive. She came to Detroit and was very much emaciated. I was called to see her about eleven o'clock at night. I got to talking to her and she told me about her sore throat, or her mother did. I asked her if she ever kissed anybody. Of course she was offended and said "no". The next morning in making my visit her mother came to me and said "Doctor, my daughter is engaged to a young man where we live, and last summer they were down at the beach together, and I presume he kissed her." "Well", I said, "did that young man have any skin trouble ?" They couldn't recollect whether he had or not, but finally they said that he had told them that he had been getting shaved at a certain barber shop, but he was shaving himself now on account of some little sores. The woman had syphilis, no doubt about it at all, but perfectly innocent syphilis. She went away from Harper Hospital with her body covered with the marks and scars of it. I don't understand how any individual will treat a patient for four months, with that condition of the stomach, and give them anti-toxine, and think it is a case of diphtheria.

I think that Dr. Spencer's paper is a very good one and very pertinent. The more we have of these papers, the more we are helped.

Digitized by Google

DR. H. M. KING, Grand Rapids: Before Dr. Carrier closes his remarks I would like to have him describe to us as far as he is able to, the condition of the throat of the young innocent girl who is dying of syphilis. I don't know very much about syphilis, but it seems to me incredible that, where a diagnosis was made early, in this day, and in a disease for which we are supposed to have a specific, that she should go on to death, with the case recognized and under treatment from the very initial stage, and I am very much interested in the appearance of this throat—if Dr. Carrier will be kind enough to describe it.

DR. CARRIER: This case came to me at Harper's Hospital and I had her at St. Mary's two or three months afterwards. Previous to coming under my care she had been treated by a physician for nine months who said she didn't have syphilis. We put her upon mercury, and iodide of potash. There was a peculiar thing that would happen with her: When we would get the iodide of potash up to twenty or thirty grain doses she would take it in the stomach all right but would have a spasm of the glottis. They sent for me in a hurry one night, stating that the woman was choking to death. She was choking, and I didn't know what was the matter with her. It seemed to me that she had a spasm of the glottis. I could not tell what the condition was, but I watched her for a little while and found she wasn't going to die, and in two or three days she got over the trouble. It was the iodide that did it, because I put her on the iodide again and she had the same trouble. I found when she returned to the iodide she would have that difficrlty, but I didn't worry about it after that—when she got to that point I stopped. We treated her as thoroughly as we could by inunction and I used calomel sublimed and gave her the iodides, gave her iron as well and other tonics, gave her good food and good nourishment, bu in spite of everything she has not recovered. I cannot give you any explanation of the trouble in the larynx or how it appeared.

DR. KING: Was it in the larynx?

DR. CARRIER: Yes, sir.

Digitized by Google

DR. KING: I just want to say that a case that answers to this description to a certain extent occurred in my own practice some years ago. A fairly robust young man developed a tumor which appeared to affect one side—I have forgotten which—of the larynx, beginning in the supra-arytenoid structures and involving the epiglottis. This was treated, as syphilis. Tuberculosis could not be demonstrated and the man was given the benefit of the doubt in the treatment for syphilis. There was no temperature, as I remember it, and no indication of tuberculosis. The test with tuberculin was not used, however. The man went on from bad to worse and anti-syphilitics did no good whatever. The tubercle bacillus was never demonstrated. This case occurred in the Post-Graduate School in New York when I was associated with it some years ago, and I confess that I think the tubercle bacillus should have been discovered and should have been demonstrated before death. But the case was treated for syphilis and the man died in spite of treatment, and after death tubercular consolidation at the apex of the lung, partially broken down, was demonstrated at the post-mortem. The man died from supposed syphilitic brain lesion; which proved to be tubercular meningitis.

DR. STEWART, Port Huron: I was very much struck by what Dr. Carrier said about the diagnosis of hard chancres, because it was so similar to my own experience, that it is simply impossible in a great many instances to say whether they are hard or not. I very well remember a young lady who consulted me about an ulcer on her tonsil, some years since. It was a peculiar shaped tonsil, conical in shape, pointed, and on the tip of the point was this ulcer. There was a certain grayish look about this ulcer which made me suspect it being a hard chancre. I said to myself, "Here is a good case for excision and we'll see if it will do any good." The tonsil was enlarged and would be better out anyway. I slipped the guillotine over it and excised it down close. This was followed in about four or five weeks, I think, with a well marked syphilitic rash, all over. In this case excision did no good whatever.

Digitized by Google

Our city is a port city and a great many vessels lie up there in the fall. Some years ago there were a couple of dredges with the attendant tugs and scows laid up there and—I may really be considered as telling a story that is slightly fishy—those two dredges with their attendant tugs unloaded eleven cases of syphilis, of which I got eight. I put none of these on syphilitic treatment immediately, although I felt morally certain as to what the trouble was. They all did very well with the exception of one. He had sores on his scalp and body, he had sores in his mouth and throat, and in fact his tissues just seemed to melt. He was the only one I had any trouble with. He has since died from the disease. He passed from my care and went up into the northern part of the state. I had considerable correspondence with the doctor who attended him after he left Port Huron. He went on and had secondary and tertiary lesions side by side, the tertiary finally predominating, involving the brain, had convulsions, etc., and finally died.

Now about treatment: I wish to go on record as saying that in selected cases, where the diagnosis is beyond doubt, and the physician has the full confidence of the patient, I firmly believe that it is weak in theory and wrong in principle to wait for the rash to appear before beginning treatment. Now bear in mind I say "in selected cases where the diagnosis is beyond doubt." A case in point: A—— B——, age 32 years, strong and robust, consulted me regarding sore in the meatus, lower side. It was not very sore but quite hard, as though a button had been slipped under the skin, indurated glands in left groin, hard and not very painful. Came on rather slowly, about five weeks after exposure. I told him my fears and advised beginning treatment immediately. He consented and has never been sick one day from this disease. No rash, no mucous patches, no anything; now you say, "The diagnosis is in doubt." Wait! I treated his wife for the disease, also a spinster of about forty years of age, and another married woman, all of whom undoubtedly contracted the disease from this one man. Now I have been to a great deal of trouble to verify the above and I am in a position to say it is correct.

Digitized by Google

Now I am not arguing from the moral side of this question, but the physical. This man morally ought to have been lynched, but physically he is much better in my opinion than as though treatment had been begun later. I think now, as I have thought, that if one has a hard race to run, the quicker the start the better chance for victory, and what is to be gain. d by waiting? The disease spreads farther and farther, the walls of the lymphatics and blood vessels become more and more involved, and it is manifestly harder to get it under control. The case mentioned above is not the only one where I have begun treatment immediately, and the slowness but sureness with which the sore healed and the glandular enlargement disappeared, make me sure that my diagnosis was correct.

In considering this trouble, the personal make up of the patient has to be considered. You are all acquainted no doubt with certain forms of abscesses in which some tissues melt without any swelling or without any limiting wall; other tissues will fight very hard and form a very hard limiting wall. What is true in those cases is also true in syphilis. I have one case in mind in particular, I was thinking about when Dr. Carrier was speaking. I have a young man to whom I have tried to give mercury in all forms. He has not syphilis. I gave him a small dose of calomel one day in the office. He had a skin lesion develop in about twelve hours. I think it was a form of urticaria. It was simply terrible. He was nearly frantic. It didn't look like an urticaria; it seemed to be a little bit larger than goose flesh and was all over him. I have tried him a dozen times since and am totally unable to fool him with anything down to a quarter or an eighth of a grain of mercury, and have tried inunction with the same result. He will have that feeling in his skin and have that rash de velop, so that it is simply impossible, and I have often won dered what I would do if he should contract syphilis.

DR. SPENCER: I have only a word to say, and that is this: From what I have disclosed in the paper and from the discussion it is shown that physicians, in treating syphilis, have not done their duty by the patient nor by the public unless

Digitized by Google

they have very thoroughly instructed the patient as to the care of the mouth particularly—to guard against coming in contact with the pure. There is no doubt that many patients are treated, not knowing that the secretions of their mouths are poisonous, and they allow them to come in contact with the innocent and thereby they are contaminated. I think we cannot be too particular in regard to this.

Also in regard to ulcers on the tonsil. In both of the cases I report in my paper, in which inoculation took place in the throat, it appeared on the tonsil. I think when we see an ulcer on the tonsil, with a slight tendency to induration of the sub-maxilliary glands, the ulcer sluggish and covered with a gray membrane, we should begin to be suspicious that the case may be syphilis.

Digitized by Google

VACCINE.

CHAS. T. McCLINTOCK, M. D., Ph. D.,
Detroit.

During the last few years some noteworthy additions have been made, to our knowledge, of vaccine. These bear on its nature, preparation and use. English students have revolutionized the method for preparing vaccine, while some French investigators have done brilliant work on the question of vaccinal immunity.

As the result of a long series of experiments, Copeman found that by adding glycerine to vaccine the bacteria contained in the latter were gradually destroyed, while the vaccine organism—whatever that may be—was apparently unharmed. If we take some vaccine as it comes from the heifer, place it in a mixture of from 50 to 75% pure glycerin, we will find after some days that the bacteria begin to disappear in cultures made from this mixture. In from four to six weeks all of the ordinary non-spore-forming bacteria are killed. Some of the spore-containing bacteria, as the hay bacillus, are killed only after prolonged exposure.

The opponents of vaccination (fortunately scarce in this country) have as one of their chief arguments the likelihood of transferring disease by vaccine. In the arm to arm vaccination this occasionally occurred. Syphilis, and possibly other diseases, were now and then transferred from one child to another. In the case of animal vaccine, their great bugaboo has been the tubercle germ. Our methods for selecting cattle would practically exclude this danger. But even if they were tubercular the probability of the germ being in the skin is almost nil. But even if they were in the vaccine,

Digitized by Google

as pointed out by one of the English students, they would be killed by the glycerin. I have repeatedly verified this in the following way: To some fresh vaccine large quantities of highly virulent tubercle germs were added. To other portions, fresh sputum containing abundant tubercle germs were added. These were then mixed with glycerin in the usual way. After four weeks large amounts of this material was injected into guinea-pigs; in no case were the pigs affected.

In one series of like experiments made with the germs of tetanus, the germs were apparently not killed. The pigs died with typical tetanus. Several cases of tetanus following vaccination have been reported in the past year, *apparently*, i. e. judging from the date of the development of the symptoms, these were not due to the vaccine but to subsequent infection of the wound.

As tetanus is not a disease of cattle, it would seem that with proper care in the production of the vaccine there should be no danger from this source. Using the glycerin method it is possible to produce an almost germ-free vaccine. In contrast with this, some studies made in the past three months with vaccine points, showed in points produced by one of our prominent makers the following number of germs per point: 119,250; 73,000; 1,078,000; 550,000; 36,000; 394,000; 18,500, or an average for the seven points examined of 273,450 germs for each point. This, it should be said, was the worst vaccine examined, and this did not take into consideration the anærobic germs, or any germs that might be present which require a special culture medium. These were only those bacteria which would develop in two days on ordinary glycerin agar.

Most of you have seen bad results following vaccination with impure vaccine, sloughing ulcers, badly swollen arms; some deaths have followed. In England the conscientious objector to vaccination, who by law is exempt from cumpulsory vaccination, usually refers to some such case he has known.

I have recently seen some photographs of a number of frightful ulcers as a result of vaccination in our soldiers in

Digitized by Google

Cuba. In contrast to this I have a report of over 700 vaccination made in a western penitentiary, the most of them successful. The physician in charge writes that not a single arm had to be dressed, that not a single hour was lost from work on account of the vaccination. This was an asceptic vaccine. It should perhaps be said, that even with pure vaccine there are occasional reports of sore arms, but here the physician, not the vaccine, is at fault, or it may be that due to carlessness, ignorance, to scratching or some such, the patient infects the wound after all due care on the part of the manufacturer and the physician.

Glycerinated vaccine has come into all but universal use on the continent of Europe and in Great Britain. In this country the larger part of the vaccine used is the glycerinated product. Some physicians cling to the use of the points because they are much easier to use. The brute logic of facts will in time persaude them. Some producers urge the use of the points for purely selfish reasons. It requires the skill and means for bacteriological work to produce the glycerin product. Again it usually takes about six weeks to prepare this form of vaccine. This means that the material must be prepared in anticipation of demand. As the vaccine is short-lived, the output is lost if the demand falls short, or has been over estimated. The points can be marketed within a week from the time the heifer is vaccinated, or, as it were, on demand.

The mildness of the reaction with a pure vaccine often leads the physician to doubt as to whether this vaccine has taken. The question is continually being put, what constitutes successful vaccination ? I would answer that question as follows: The only outward indication of the successful taking of vaccine is the formation of the vesicle. Typically, this is umbilicated, but this manifestation may last but a short time and may be entirely overlooked by the physician. Neither the fever, the extent of the wound, constitutional symptoms, size or depth of scar, or any such, are typical of vaccination. As a rule the vesicle becomes pustular, but not necessarily so. This is, as we believe, due to bacteria in the skin. If these chance to be absent or are removed, the vesicle dries

Digitized by Google

up and does not become pustular. At the proper stage the contents of the vesicle are such as to give it a pearly appearance. This may last but a short time and may escape the notice of the physician.

ERRATA.

Page 317. Word toxin in line 18 should read "vaccine."
" " seen " 23 " " "shown."
Page 320. Word two in next to last line should read "ten."

toxin; or the germicidal power, the ability to destroy germs.

Bear in mind that the causative agent in toxin is unknown. By exclusion, we are led to believe that it is probably an animal rather than a bacterial organism. That it is a living, structural self-multiplying somewhat we feel sure. This virus-destroying or anti-virulent power is not a property of normal blood-serum, as has been seen by the following experiment;

A little blood is drawn from the jugular of the normal heifer and the serum separated. The heifer is then vaccinated. After some fourteen days more blood is drawn and the serum separated. Now a certain amount of a tested vaccine is mixed with each of the serums. After some hours of exposure the vaccines are inoculated separately on the opposite side of a normal calf, both samples on the same calf. The one mixed with the blood of the heifer before she was vaccinated produces typical vesicles, the other is wholly inert.

Similar results were obtained with the serum from vaccinated horses, hogs and men. Their blood contained something that very quickly rendered inert vaccine mixed with it, while the blood of the same animals before they were vaccinated had no such power.

Digitized by Google

Like results were obtained with the serum of persons who had recovered from smallpox. Vaccine treated with such serum showed on infants and calves that in was wholly inert.

The blood from apes which had been inoculated with smallpox showed, as in all the foregoing, the power to kill the vaccine organism.

It has been known for some years that if vaccine was injected subcutaneously or intravenously into susceptable animals, they become immune without the formation of any skin lesions. It has often been proposed that we should use the subcutaneous method in making vaccinations. It is quite probable that with an asceptic vaccine the results would be more constant than with our present method, but we would have no ready means for telling whether or not the vaccine had taken.

The blood of the animals injected with vaccine or smallpox virus shows full anti-virulent power.

Among the most interesting of the results obtained by the French workers are those pertaining to the nature of this anti-virulent substance. As the outcome of many experiments they seem to have proved the following: The serum from a vaccinated heifer, kept for one year, seemed to be just as active as when first drawn.

"We have seen serums exposed for a long time to sunlight, serums coveted with a thick layer of mould, serums infected and giving off very foul odors, alike demonstrate by their action on vaccine that they lost nothing of their anti-virulent power."

The action of heat is very noteworthy. The serum of a heifer heated for one hour to 70° seemed to lose nothing from its anti-virulent power. The serum from a horse heated until some of the tubes were coagulated showed no loss. In the dry form, heating for 30 minutes at 100° seemed to have no effect, while heating to 125° for fifteen minutes did not entirely destroy the anti-virulent power.

Contrast this with the antitoxic and germicidal properties of blood-serum. The antitoxic power of serum is destroyed by a temperature of 55°–60°. The bactericidal power of

Digitized by Google

serum is destroyed at 60°. Antitoxic and bactericidal powers are rapidly destroyed by light. The bactericidal power of serum is lost in a few days; the antitoxic power slowly but surely diminishes. Bactericidal power is believed by many to be a property of the nucleins. Antitoxin seems to be connected largely at least with the albumins.

This anti-virulent substance is in many of its properties similar to the agglutinating substance found in certain serums, the substance which causes Pfieffer's phenomenon—the clumping of bacteria—best known and studied in Widal's test for typhoid. The agglutinating substances seem either to be globulins or to be associated with the globulins. They are not destroyed by a temperature of 60°. Sunlight seems to have no harmful effects. A considerable degree of putrefaction in the serum does not diminish its agglutinating power. Widal kept a specimen of such serum for fourteen months. Although the surface was covered with mold its clumping powers was undiminished.

The anti-virulent substance passes through porcelain filters. It does not appear to dialyze. Their studies show that this substance is either a globulin or is attached to the globulins. Their own conclusion is that it is an enzyme having properties analogous to the diastases.

In a vaccinated calf the vaccine attains its greatest virulence from the fifth to the seventh day. The vesicles usually become dry on the seventh day and the virulence of the vaccine obtained rapidly deteriorates from this time on. But the anti-virulent powers are not recognizable in the serum usually before the ninth day and do not reach the maximum until about the 13th day. We have here phenomena quite analogous to those observed in cases of recovery from diphtheria —the blood of the recovering child contains antitoxin. Apparently as this increases the virulence of the infection decreases.

The duration of vaccinal or smallpox immunity is of great interest. Is is well-known that one attack of smallpox often confers a life-long immunity to the disease. To this there are, however, many exceptions.

Digitized by Google

So in vaccination; a person successfully vaccinated in youth and periodically re-vaccinated it may seem that the vaccine never takes. Here let me emphasize what is not generally recognized, that there are all degrees of "taking" in vaccination. Your patient may be very susceptible—you get a typical vaccination—or he may be wholly immune—the vaccine has no effect; or he may be at any stage between these two extremes. Suppose your patient has a partial immunity; you vaccinate him; the vaccine grows a bit, raises his immunity, and in so doing throttles itself. You have accomplished your purpose, have completely immunized the patient, although the vaccination was atypical or abortive.

It is noted that vaccinal immunity is lost more rapidly in the young than in adults. This is as we should expect, owing to the more rapid tissue metamorphosis in youth.

In the horse the duration of vaccinal immunity appears to be from a year to a year and a half. In the case of the heifer the immunity appears to last from one to two years. In man, while there are many variations, it appears that vaccinal immunity and the anti-virulent substances in the blood which give the immunity, may persist for fifty years. This is very interesting. All we know of the subject leads us to believe that the anti-virulent substances in the blood are produced during or immediately following the vaccinal or smallpox eruption; there is no subsequent addition, unless we conceive of these substances as self-multiplying. This barred, it follows that the anti-virulent substances we find today, in the favorable case, were added to or produced in the blood a half century ago and have remained there ever since.

The Widal reaction has been obtained in a few cases from ten to as high as 37 years after the attack of the disease. These are the exceptional cases, to be sure, both for vaccine and typhoid. In the latter disease oftentimes the reaction disappears in a few days, or weeks at most.

As the result of experience it is usually advocated that re-vaccination should be practised at least every two years and oftener in case of a threatening epidemic. It has been found

Digitized by Google

that immunity persists for some time after the failure of the blood to show anti-virulent or agglutinating properties.

This probably means that these properties are present. In the case of vaccine they are powerful enough to prevent the growth of the vaccinal organism. But the quantity, though large enough for this purpose, is too minute to be recognized by our crude test, viz: the killing of the organism.

The case appears to be similar to what we note in antiseptics. Many substances are powerful enough to prevent the growth of germs, without being able to kill them.

These studies on vaccine seem to show that here we have a case of humoral immunity, dependent, not on some changed or acquired function of the cells, but due to the persistence of soluble substances in the fluids of the body. Little by little we are acquiring knowledge as to the nature of immunity, the fundamental problem in the prevention and cure of disease.

Digitized by Google

DISCUSSION.

DR. BIDDLE, Detroit: I would like to ask Dr. McClintock what he considers a good vaccine—looking at the person who is vaccinated, what constitutes a good vaccination. Suppose I am called upon to vaccinate every soldier that goes into the regular army, what constitutes a good vaccination?

DR. MCCLINTOCK: Do you mean the scar?

DR. BIDDLE: Yes, and how often must the soldier be vaccinated?

DR. MCCLINTOCK: The scar indicates that the person has been vaccinated. Usually immunity lasts for some years after vaccination. This is all we can say. The persons immunity is in no direct proportion to the size or depth of the scar. I should say in the case of soldiers or in the case of school children they ought to be periodically re-vaccinated, no matter whether they have good scars or not.

DR. BIDDLE: Won't the pus destroy the effects of a good vaccine, so that a badly appearing arm is not very well vaccinated?

DR. MCCLINTOCK: I should think it perfectly natural that it would.

DR. BIDDLE: How are you going to tell?

DR. MCCLINTOCK: You cannot tell. This person may have a good scar and yet this other person may have been vaccinated on the mucous membranes and have just as much immunity.

DR. JENKINS, Tecumseh: You mean re-vaccination would be the best test?

DR. MCCLINTOCK: Yes sir, re-vaccination would be the best test.

DR. H. M. KING, Grand Rapids: This paper strikes me as being one of the most interesting papers that has been pre-

Digitized by Google

sented to this section and it is so thoroughly complete and exhaustive in its nature that it is scarcely possible for one to discuss it to the listeners, or add anything to it.

The question of vaccination by sub-cutaneous injection interests me very much and it seems to me the most elegant way to procure that immunity to smallpox that vaccination does procure, if we had any means at all or could devise any means for determining whether the vaccination "took," so to speak, or not. With the surface vaccination, the typical sore, the appearance of the sore, and subsequent scar, are characteristic and supposed to convey knowledge as to whether the person has the desired immunity or not.

I have recently had an interesting experience in regard to vaccination myself. At the age of four years I was vaccinated, and successfully, and have still the scar that was left at the time. While in Montreal during an epidemic of smallpox in the early eighties I was twice vaccinated unsuccessfully. I was not then in medicine and was told that that effort showed me to be still immune. Of course we know that is not true. A failure of vaccination to take is no proof that one is immune to smallpox, and only a successful vaccination conveys any positive immunity to the disease. While a surgeon in South America, during my service there were two epidemics on the coast where we happened to be and I not only vaccinated myself frequently but all on board ship. While most of the sailors and officers were vaccinated successfully, I could never procure a positive result with myself. Three or four weeks ago, expecting to come to Kalamazoo, and hearing there was a great deal of smallpox here, I thought I would take the precaution of vaccination. Five of us, alltogether, were vaccinated. Mine was the only real thing in vaccination and it developed two weeks after inoculation, and I went through the regular vaccination sore and have a beautiful scab on my arm now. I speak of this to show that a person may be immune to vaccination for a great many years and then finally suddenly become susceptible to it again. And I should like Dr. McClintock to tell in his closing discussion whether he believes that failure of the vaccine to take, so to speak, on former

Digitized by Google

occasions was due to some immunity that I possessed to vaccination or to a probably poor vaccine, or what, in his opinion, was the cause; and also why my last vaccination, which was successful, was so long delayed.

DR. CARRIER, Detroit: The paper to me has been a very interesting one, indeed. We all have coming to us patients for the signing of school certificates of vaccination, and the parent says, "My child was vaccinated and he had an awful arm, he has got an awful scar, look at it," and I do so. There is nothing typical about scars of that kind. I think that a vaccine lesion running a typical course, without any irritation and the lesion allowed to pursue its natural course, will leave a scar which is typical of vaccinia. At least I always regarded it as such, but the only positive evidence that we can have, of course, is a re-vaccination. And then, how many times to re-vaccinate? I have one child that I commenced vaccinating and made twenty-one applications of the virus, which I supposed at the time was good virus, and with the seventh vaccination she had the vaccine vesicle.

Now, a sore arm or high temperature or anything of that kind is not necessary to the vaccine disease. The individual may not know from any systemic disturbance that he is having the vaccine disease and the resulting lesion be not the typical vaccine lesion, and some of these lesions, for instance, the mulberry lesion or the strawberry lesion, which I have seen on arms has been as positive of vaccination, that is, the immunity has been as positive as in the ordinary scars we have, which are supposed to be typical. Undoubtedly the virus from points has given us many of these sore arms, and the sore arms have not always been vaccine lesions. But you are asked to vaccinate, some people do, and want to pay you fifty cents for the vaccination, the ordinary way of vaccinating. Now I want to know how much time a man can put upon an arm to render it aseptic, his instruments and everything else, to make a vaccination, as he would in an ordinary surgical operation for a half dollar? I do not vaccinate people, I tell them I am afraid of vaccination, but if I did I would want a five dollar bill every time I vaccinated.

Digitized by Google

I should think there might be a means by which, if the action of the blood serum upon the vaccine is what Dr. McClintock states, we might use it hypodermatically, inject it sub-cutaneously, later we might draw a little of the blood and try its effects upon vaccine. Of course that would be a good deal of trouble but it would be worth the experiment, because there is hardly any part of a young lady's body that she wants scarred, you cannot put it on the arm and they do not like to have you put it upon the leg, and in using it sub-cutaneously we could avoid all that, and if the virus can be rendered sterile as Dr. McClintock says it can be, by the putting of it in glycerine, then we have got the ideal vaccine, we have got what we have been looking for for a great many years, and a physician with ordinary care rendering his operation thoroughly aseptic, will have no bad results, at any rate, from the infection of the virus, and will probably always have good results.

Dr. Hafford, Albion. This question of the scar, telling us whether the vaccination has been good or not I think is something that in the future, with glycerine in vaccine, will not amount to very much, because I do not think we are going to have very much of a scar, and so we might as well, if we can use that vaccine, use it hypodermatically as any other way.

There is one question I want to ask Dr. McClintock in regard to using glycerine in vaccine. I recently vaccinated about sixty people, using that, and the majority of the cases that I have been able to follow up have not yet showed any signs of working, as we speak of the virus working usually. Their skins are as fair and smooth as though they had never been touched. Those that show signs of working are now, at ten or twelve days, beginning to show a little faint red blush and some itching of the arm. I performed those asceptically but I do not think that the asceptic precautions that I took, or the antiseptics I used were strong enough to destroy the virus. The method I used was to disinfect the arm with a solution of formaldehyde and then wash it with alchohol and then with sterile water. I have been a little surprised. I have not had experience with this vaccine before. I don't know whether it takes longer to work than the old

Digitized by Google

vaccination or not. That is one point I should like to have explained.

DR. CRANE, Kalamazoo: I would like to ask Dr. McClintock if there would be any object, after a man has been exposed to small-pox, in using the virus by means of a hypodermic injection—whether it would be likely to give a quicker immunity and save the patient from future consequences?

DR. MCCLINTOCK: I think we are all disposed to try it. Whether it would do any good or not I do not know. It would be a question as to whether the two diseases co-existed, the mild disease, vaccin, and the more vigorous disease, small-pox, and whether one would affect the other or not, I don't know. I think Dr. Crane has had an interesting experience with this. Did you try it on yourself?

DR. CRANE: I didn't try the injection. I had a vaccination at the same time that the varioloid came on.

A MEMBER: Didn't it modify the small pox — didn't you have only varioloid?

DR. CRANE: I had only varioloid, but I had four scars on my arm, one of which was the result of vaccination four years ago.

DR. JENKINS: The experience in the German army as well as the German nation is certainly the best example we have of the value of vaccination and re-vaccination, and it is clearly demonstrated that it becomes necessary to re-vaccinate and re-vaccinate, in order to make it successful. In the Franco-German war smallpox prevailed only to a limited extent among the German soldiers, while in the French army re-vaccination was only occasionally practiced—the disease prevailed throughout the army; many civilians succumbed to this dreaded disease. These are a few of the many instances that may be cited in favor of vaccination and re-vaccination.

DR. PETTYJOHN, Alma: I have been intensely interested in this paper because I am contemplating performing about 120 vaccinations within the next few weeks, and as a student of this subject some years ago, I confess that I am old fashioned enough not to be satisfied with just using an antiseptic lymph and seeing no results, as in the case of the doctor here, and I

Digitized by Google

question whether we will satisfy our patients on any such basis as that. They are accustomed to having a sore arm, whether it comes from the vaccination or from the contamination of the vaccine, and they are accustomed to having something they can see, and we are all materialists more or less—something for the five dollars, as Dr. Carrier suggests. Then it seems to me that if we are not to determine anything by the character of the scar that is left, the only way we can determine immunity is to examine the serum of each case, according to the tests which Dr. McClintock has given us. So that that will necessitate, first, vaccination, then in the course of a few months examination of the serum, and if we find that the patient is not immune, a re-vaccination, and so on. By this procedure we would have a good deal of business on our hands for the next few years examining and vaccinating patients.

I am a believer in using what our pharmacists produce in these days, but I think if they get too highly refined we will have some difficulty in satisfying our people that we are still practicing on the old original basis. We all know what a typical vaccine scar is, as we do the results of the typical smallpox eruption, and we are all used to putting it down in the school certificates in that way, and it seems to me if the virus that is now used does not produce something of that kind, life is too short to go through all these serum tests and re-vaccination of all these people to see whether they are going to have the smallpox or not and then try to satisfy them without a scar. I am very much interested and very much obliged to Dr. McClintock for this very excellent expression of his study of vaccine.

Dr. McClintock: I would like to say in reply to the doctor over the way here, as well as the last speaker, that perfectly pure vaccine itself produces the same results—immunity without suppuration. In most of his cases there he has not got vaccination. Of course the vaccine may be inert. One trouble about pure vaccine is that it takes from four to six weeks to make it pure and the life of the vaccine is shortened that much. It is not as certain as if you had

Digitized by Google

just taken it from the calf. The question is whether you would rather have it a little more uncertain or a quick-acting virus containing germs. Now there may be several reasons as to why vaccine fails. It may be the vaccine. This is to be noted; that often physicians who use great care, who haven't used the product put up in glycerine, are not as apt to get good results as after they become accustomed to it. In vaccination we probably have a very minute organism growing in the cells and that has got to be inoculated into the cells. The glycerine tends to sweep it off instead of taking it in. It is more difficult to vaccinate.

Digitized by Google

TEMPERATURE AND DISEASE.

H. J. CHADWICK. M. D.,
Grand Rapids.

Like an army that goes forth to find the enemy that it may annihilate him, returns after the campaign to see if any new tactics have been devised or new arrangements of the old ones, the great army of physicians may find it profitable, now and again, to rest from their ardent pursuit of disease, turn their microscopes for a day into field glasses, and sweep the great horizon of causes, and perhaps, after all, the mote we have been ardently watching may prove a beam.

I am sure that not all disease is caused by a specific germ or any number of them. If I shovel real actively for an hour or two I blister my hand. Disease follows. If my antagonist strikes my eye it becomes black. There is disease there. The circulation in the parts damaged has been arrested. Certain chemical processes have to take place before the natural color of my eye will be restored. If I have butyric, acetic or hydrochloric acid in my stomach in excess I am distressed; I am for the time sick. If I take bicarbonate of soda it meets these acids, a new salt is formed, CO_2 escapes, a chemical change has taken place, and I am relieved. A patient's urine smarts him. On examination I find it acid in reaction. I suspicion it may be uric acid in excess. I administer carbonate of lithium. The urine becomes alkaline; the patient is relieved. A chemical change in the excretion took place without the concurrence of a single germ.

How far can we go with chemicals to bring the secretions and fluids of the body to their standard. Alkalinity or acidity can only be determined by patient experimental investigation;

Digitized by Google

but sufficient is known to make this an enticing field to work in, with promise of an abundant reward to the enthusiastic student. What I consider one of the most fruitful sources of disease, is sudden changes in temperature surrounding our bodies. Go with me into this dwelling. Here I have a lady with a hypertrophied womb, eroded around the os and cervix, extending through the womb to the ovaries. Her feet are cold, they are cold every day in the year. The husband cannot see the reason, as he is not afflicted that way. The babe there, creeping over the floor, is running at the nose one part of the time and at the bowels the other. Why? Place your hand around at different places on the floor, and you will feel the cold air coming up, every change in the atmosphere is felt suddenly by the child and mother. The surface blood of the limbs and body is driven by the contracted tissues of the surface, brought on by the cold air, into the warmer parts of the body, brain, prima via, stomach, pelvic organs, lungs and heart, and all the capillaries of these parts, are congested and the weaker they are from other causes, the worse they will be made by the external cold. That is not all fancy. I call to your minds how tight your shoes and rings may feel on your hands or feet in a warm room; and how loose they grow when you are out walking on a cold frosty night. Why? The blood and the other liquids are simply squeezed out of them by the contraction of the lowered temperature into the warmer parts of the body. Now, the mother, usually sewing, sweeping, or dusting, or exercising her arms, they are fairly warm; but the feet, encased in thin shoes, in constant contact with the cold currents from the floor, are kept cold, as well as the limbs, preventing a free circulation in the lower extremities, damming the blood back on the pelvic organs, congesting them, and rendering them morbid. So, before I treat her for her eroded womb, I will prescribe felt shoes for her feet, and have her discard the thin tight-fitting pair she has on. I'll have the father place the heating stove in the cellar, so that the air will strike the feet first, instead of the head, as it now does. I'll thus first equalize the circulation, give proper food, and cure my case.

Digitized by Google

But what I wish to call your attention to more particularly is sudden changes of temperature, and it's effects on our external bodies. We may become accustomed to almost any degree of temperature in any climate on the face of the earth; the broiling sun of the tropics, or the frigid Iceland of the north; while a sudden change in temperature may cause death in any zone.

It is said by Nansen and his men, while on their polar current hunt, they suffered but little from the cold there; but as soon as they came into the latitude of civilization most of them were attacked with grippe and other inflammations of the air passages and joints, a fact taken advantage of by bacteriologists to prove that they became infected with Pleffer bacilli and pneumococcus, prevalent in the warmer climates of the earth. But a more rational conclusion, to my mind, is this. As soon as they came into a land of hospitals, nurses, homes and friends, they relaxed the rigid rules of living they had adopted in the arctics, exposed themselves, as we all would at the prospect of soon meeting our friends, sudden reductions in body temperature were probably quite common, and they took cold, speaking in the language of the last generation.

If it was not such a serious matter it would be laughable at the assertions of some bacteriologists. Here is a sample: A ship, anchored at a port in England; they were having grippe in London; one half hour after they had anchored forty men were down with the grippe, contracted from the land breeze then blowing from the region of London, and in less than a few hours over one hundred had the grippe.

Now, if this sickness ever did occur, what was it ?

You have sailed some, no doubt. So have I. And you know as soon as a ship enters harbor how every one will crowd the deck, coming out of warm cabins and state rooms; out of inactivity into the windy fresh land breeze. They were chilled through and through. The sudden cold contracted the blood vessels of the air passages, the excitement of the occasion forced the blood into the capillaries with renewed energy; congestion followed, sneezing began, and if they did

Digitized by Google

not have gumption enough about them to immediately get into bed or near a warm fire, and thus draw the blood back to the surface, from whence it had been driven, this congestion will continue on to inflammation, and death of the capillaries involved, which will be told in seven or eight days by a purulent discharge from the nostrils and bronchi.

A gentleman I am acquainted with last winter had two head dresses, a seal skin cap and a derby hat. On three distinct occasions he changed from the cap to to the derby, and each time he was followed by sneezing, a watery discharge from the nose in about twenty-four hours; twenty-four hours more these symptoms aggravated by frontal headache, and a sense of fullness and tightness across the forehead, aching back of eyes, slight fever, backache, and a sense of weight in the limbs. He had been told that he had the grippe. In about seven days a purulent discharge began to appear from the nostrils, and in about two weeks, from the beginning of each attack, he would recover. In other cases from similar causes, the principle catarrhal condition would be in the throat, especially when there had been some previous excitement of these parts from smoking, running, or rapidly walking against the wind.

Thus I account for many cases of cholera infantum, and enteric fever in adults. Most all cases of mastoid inflammations of the middle ear, supraorbital neuralgia, and rheumatism, can easily be accounted for by noting the fact that the patient was overheated and got suddenly chilled. When chilled in the whole body, he would be more apt to get peritonitis, pneumonia, congestion of the brain, or if he sat near a thin draft of cold air which struck a portion of his body, such as might be imagined as coming through a straw and striking the over heated eye brow or coming through a gun barrel and striking the petrous portion of the temporal bone, setting up congestion and subsequent inflammation of the mastoid cells.

I am not writing to disparage the most ardent research with the microscope, or to detract from the great achievements of bacteriologists but more to remind ourselves that many old

Digitized by Google

ideas of the causes of disease were and are good today, and can be demonstrated quite as truthfully, for I believe that not nearly all asserted bacteriologists today should be taken without question.

Consumption is no nearer under control than when Koch discovered his tuberculine. Diphtheria, according to published statistics, is not cured by antitoxine alone, and even with the combination of antitoxine, good sanitation and throat washes, a larger percentage is not cured than hundreds of physicians in private practice can cite, with remedies of far less repute.

Yet, in the eyes of who would be authority, good physicians are condemned with their long tried remedies, and a record of 80 per cent. cures, because they do not enthuse on the new antitoxine.

If in writing this paper I have stimulated my fellow practitioner to dare to think for himself, believing this is the way of all true progress, I will feel well repaid for my report.

Digitized by Google

STRICTURE OF THE ŒSOPHAGUS AND ELECTROLYSIS BY A NEW ŒSOPHAGEAL ELECTRODE.

CHARLES D. AARON, M. D.,
Detroit.

The œsophagus is a musclar canal and a continuation of the pharynx. It begins in the neck at the level of the sixth cervical vertebra and lower border of the cricoid cartilage and is the narrowest part of the digestive canal, leading directly into the stomach. It is about 25 centimetres or $9\frac{1}{3}$ inches in length. It is most constricted at the point of the fourth dorsal vertebra and at the diaphragm. The œsophagus terminates at the cardiac orifice of the stomach.

Stricture is the most important and the most frequent disease of the œsophagus. The diagnosis of it is not difficult so far as the determination of the contracted lumen is concerned. There are, however, difficulties in individual cases with regard to the ascertainment of the cause and nature of the stricture. Stricture of the œsophagus can be frequently recognized by the subjective symptoms alone. Patients complain that food remains in the throat or above the stomach and that after a time it is forced up into the mouth with foul odor. Frequently a dilatation occurs about the contracted spot through the pressure of food. Here disintegration and putrefaction of the food take place. The food that has been here retained may be regurgitated through reversed peristalsis. This can be easily recognized as food that has not entered the stomach, for it gives an alkaline reaction and, if it be milk, it is not coagulated.

Digitized by Google

Through a gradual increase of the stricture, difficulty in swallowing arises. As the disease progresses, solid food cannot be swallowed and emaciation attains a high degree.

Stricture of the œsophagus arises most frequently through the formation of a cicatrix, hypertrophy of muscle, muscular spasms, development of tumors and of fungus growths. Pressure from without may produce a stricture, and this is known as compression stricture. At times the nature of a stricture is quite difficult to ascertain. But its definiteness is the most important demand made upon the diagnostician, as prognosis and therapy depend upon the decision arrived at with regard to the same cause of the stricture.

In the first place it is important to determine whether the obstruction is due to extra-œsophageal pressure or not. We must examine the neck to find enlarged or swollen glands. Infiltration of the cellular tissue frequently causes a stricture due to pressure. This in itself would cause difficulty in respiration due to pressure upon the trachea. Percussion over the manubrium frequently elicits dullness and in such cases we may suspect an aneurism, which may cause the dysphagia, and a careful auscultation will assist in the diagnosis. The two radical pulses should always be compared. Mediastinal tumors and large pericardinal exudates may press upon the œsophagus so that they stimulate organic stricture. The vertebral column should always be examined for deviations for pain to pressure. An abscess proceeding from a carious process of the vertebra may cause symptoms of stricture of the œsophagus. A sacculated œsophageal diverticulum also may give symptoms of stricture.

We frequently have symptoms of stricture of the œsophagus due to a spasm of the musculature. An application of a good-sized tube will usually overtake the spasm. Frequently the tube is held spasmodically and lets go suddenly, and this is usually felt by the operator. This is found in hysterical and neurasthenic patients. At times the spastic contraction of the lumen of the oesophagus is accompanied by organic changes, such as ulceration of the wall of the œsophagus. If a foreign body be present in the œsophagus for sometime, erosion

Digitized by Google

of the mucous membrane may take place and a cicatrix may form, which may produce a marked stricture. The taking of alkalies, acids or other caustic agents all may cause a cicatricial stricture, which forms after the ulceration. This kind of cicatrix may develop from any kind of ulceration, syphilitic, diphtheritic or tubercular. Frequently an ulcer at the cardia will heal and give us a cicatrix superinducing a stricture. Its presence is recognized by the history of a slowly developing dysphagia.

It is always advisable to exclude all the foregoing causes of the stricture and if they all prove to be improbable, the most frequent cause of stricture is suspected, namely, carcinoma. If a stricture be found in a patient beyond forty years of age, with emaciation and cachexia, a cancer is the most probable cause. Yet the diagnosis must be carefully made out, for it may turn out to be a benign stricture. Disgrace of the practioner and injury to the patient can be obviated by a little scrupulousness. If an exploration with an œsophageal tube prove the presence of an obstacle, and if, upon removal, mucus and blood cling to the tube, a carcinoma must be suspected, providing the symptoms mentioned before be also present. Sometimes the sound passes from the place of stricture into a narrow channel and is here held tight. When it is drawn out, a longer section is felt, surrounded tightly by a ring, which is formed by a stretched neoplasm. In rare instances bits of tissue are found in the fenestrum of the tube, and if cancer cells be discovered the diagnosis is confirmed. The diagnosis of a stricture of the œophagus can be definitely ascertained by the introduction of a moderately hard tube of average calibre. Before any tube or sound is introduced into the œsophagus, it is wise to determine whether an aneurism of the aorta be present, Ewald reports a case ("Diseases of the stomach", page 127) in which sounding the œsophagus is suggested. Percussion showed the heart dullness to be abnormally increased. From the attacks of pain and general condition an aneurism was suspected. The sounds were not used. Two nights later the patient had a terrific hemorrhage, consisting of pure blood, not frothy, which seemed as though

Digitized by Google

it gushed from the mouth and the patient died in a few moments thereafter. Where aneurism is at all suspected, examination by sounds or tubes must always be omitted.

When it is decided that the tube is to be used, it is advisable to first look for the seat of contraction. This is done in the following manner: The tube is introduced until it comes upon the obstruction. The place where the superior incisor teeth touch the tube is to be marked. The tube is then removed and the length measured from the mark to the end of the tube. This gives the distance of the stricture from the upper incisors.

The first sounding of the œsophagus should always be done with a flexible stomach tube. This should be passed until it comes upon an obstacle, and then marked where the incisors touch. After the withdrawal the tube can be placed against the cheek and down along the sternum. We can thus approximately locate the strictured spot. The most accurate way is to measure the tube between the mark and its end.

The distance from the upper incisors to the cardia in matured individuals is usually forty centimetres. From the upper incisors to the beginning of the œsophagus, it is fifteen centimetres. From the upper incisors to the point of crossing of the œsophagus and the bronchus it is twenty-three centimetres. When the stricture is twenty-three centimeters from the incisors, we have indication of tumor of the bronchial glands, aneurism, etc. If the stricture be forty centimetres, we have stricture of the cardia. Cicatricial strictures, following the taking of corrosives are usually higher up, near the entrance of the œsophagus. Advanced age, cachexia and metatasis are indications of carcinoma.

The therapeutic purpose of passing œsophageal tubes is to remove the strictured lumen. To do this, it is necessary for both physician and patient to have the greatest amount of patience. Patience gives far better results than force. In most cases of cicatricial strictures, following inflammatory processes, injuries from foreign bodies, erosions, etc., good results are obtained.

Digitized by Google

The best known instrument to locate a stricture of the œsophagus, is that of Trousseau. It consists of a smooth whalebone with flat ivory handle. At the lower end of it olives of ivory are screwed on with metallic screws. These olives are of various demensions and length. On account of their shape they can be easily introdued into the strictured spot. Their various circumferences makes it possible that smaller olives can be screwed on and introduced until we are sure the strictured spot is passed by one of them. The searching for a stricture of the œsophagus with these sounds is similar to searching for stricture of the urethra with olive-pointed urethral sounds.

When we take into consideration that in the posterior mediastinum the œsophagus is in close relation with both pleura, trachea, left bronchus, arch of the aorta, posterior surface of the pericardium and the left auricle, we can readily see that there is great danger in attempting to pass a tube, especially when we have an ulcerating carcinoma. The walls separating a cancer from the pleura, large vessels, bronchus or trachea are always thin, so that an attempt to force a sound inevitably results in disaster. It is always best to proceed very cautiously. At any rate, the greatest care is requisite in directing a tube through a strictured spot, for a false passage may easily be made.

When the obstacle has been overcome, the tubes should remain in situ five to ten minutes and immediately after a thicker one should be introduced. If we are successful in passing a hollow tube, a patient may be fed through it. The patients complain of uncomfortable feeling of pressure under the sternum and in the back while the tube is in situ. This pain disappears quite rapidly after the removal of the tube. Patients usually object to this sort of treatment, but when they find that it enables them to swallow, they put up with it quite willingly. Tubes of larger calibre should always be used, yet there are some cases in which this cannot be done. For some cases forced dilation by means of metalic dilators is advised. After this has been done for some time, sounds of large calibre are to be passed, Forced dilatation, how-

Digitized by Google

ever, is always a dangerous procedure and is to be applied by one thoroughly trained for it. The strictured spot being in the intra-thoracic section of the œsophagus, is removed from direct observation of the operator.

Schreiber's method of dilatation is the most practical and the easiest for the patient. It allows an even distension of the stricture and can be released at any moment. It consists of an œsophageal tube to which a closed piece of rubber tubing is attached at its lower end. By forcibly distending the tube with water and exerting pressure by the expansion, the dilatation can be accomplished slowly. Many good results by this method are reported.

The proof of passability does not always mean that the tube has gone farther down. Frequently the tube bends upon itself in a large diverticulum and this may mislead. The audibility of the swallowing sounds is more valuable as to substances passing the stricture.

The sound at swallowing can be auscultated in the back to the left of the vertebral column at the height of the sixth dorsal vertebra. It is a short, dull sound, which is audible immediately after the act of swallowing. In stricture it is weak and in closure of the œsophagus it is entirely absent. The sound can also be auscultated in front and below the sternum, to the left next to the cartilage. Above a strictured spot and a diverticulum very loud noises are frequently heard for several minutes. These are probably due to the contraction of the musculature and pressure upon the stagnated fluids.

If the patient cannot be sufficiently nourished through the stricture, it may be necessary to resort to rectal feeding. At times gastrostomy is indicated. This is one of the conspicuous achievements of modern abdominal surgery. It was first described in 1838, but does not seem to have been employed until 1875. The older methods have been improved upon and altogether new operations have been advised and established with a perfected technique. A gastric fistula is thus provided in the case of increasing cicatricial or cancerous stricture of the œsophagus, through which the patient may be fed and by which he can be spared the pangs of starvation. It is well to

Digitized by Google

let these patients chew the food before it is introduced into the stomach, so that the food is thoroughly salivated. This relieves the work of the stomach and intestines to a certain degree. Œsophagotomy is indicated when the stricture is high up.

Electricity has of late been a valuable assistant in the treatment of cicatricial stricture. Hemorrhage and the disagreeable symptoms are not observed. I have had some happy results from this method. As soon as a medium sized tube can be introduced into the stricture, I introduce an œsophagal electrode. This consists of a rubber stomach-tube, closed at its lower end. At this end and at the sides surrounding the tube there are several pin head openings. An electrode is passed into the stomach tube passing to the bottom. Many instruments have been brought forward for applying electricity to the stomach through a stomach tube, preventing the metal electrode from coming in direct contact with the gastric mucous membrane. (Bardet, Bull, Gen. de Therap. 1884, Stockton, Medical Record Nov. 9th, 1889.) Yet I have never seen a stomach tube advocated through which electricity can be applied to the œsophagus.

When the electrode is in the stricture, connection is made through the secretion from the œsophagus which gathers between the electrode and the tube through the pin-head openings. Electrolysis is applied directly through the stricture. After the œsophageal electrode has entered the stricture, it is connected with the negative pole of the galvanic battery. The positive pole is placed on the skin. While both poles are held in position the current should be increased from zero very slowly. Three to five milliamperes are allowed to pass through the stricture for ten to twenty minutes. This operation should be repeated three times a week and a larger electrode should be used at each successive sitting. I am not able to state precisely how much we gain by electrolysis and how much by mechanical pressure.

I report the following cases of cicatricial stricture of the œsophagus which were treated by electrolysis in the manner I have described.

Digitized by Google

CASE I. Miss L. T., with a history of dysphagia, was referred to me by Dr. Willard Chancy of Detroit. She is thirty years of age. Her family history is good. Was always well and strong until she was 21 years old, when she was taken with indigestion. For the past two years she has had difficulty in swallowing. This had been continually growing worse. She says that the food goes down part of the way and stops in the œsophagus. She must frequently get up from the table, being unable to finish her meal, and at times must forego three or four meals in succession.

She consulted me September 28, 1897. She lost twenty-five pounds and was somewhat emaciated. Said that at times she is unable to swallow water. Physical examination gave negative results. Swallowing sound was heard very indistinctly and was retarded. All nervous trouble, hysteria and neursthenia could be excluded. An ordinary-stomach tube met an obstruction thirty-three and a half centimetres from the upper incisors. Smaller tubes were used but they would not pass the cardia. Bougies were then tried and a small one was successfully passed. This was allowed to remain a few minutes when it was removed and a larger one was passed. This process was kept up daily until Oct. 26th, 1897, when I was able to pass a medium sized œsophageal tube. November 30th, 1897, galvanism was applied to the stricture, negative pole in the stricture, positive pole over the xyphoid cartilage. Three milliamperes were allowed to pass through the stricture for ten minutes three times a week. A larger electrode was always used so that mechanical as well as electrical means were employed simultaneously. The relief the patient received was quite marked. January 31, 1898, or eight weeks after the use of electrolysis, the patient had gained twenty one pounds. She was allowed to return to her home which was forty miles from the city. She returned for consultation every four to eight weeks, when she would always receive electrolysis in the manner stated above. December 15, 1898, patient felt quite well and could swallow all kinds of food.

Digitized by Google

CASE 2. Mrs. A. K, age 27, was referred to me by Dr. Jones of Leesville, for difficulty in swallowing. She had always been in good health until two years ago, when she began to complain of food stopping in the œsophagus.

This had gradually been getting so bad that she could not swallow soft foods and that even water passed with much difficulty. She lost 40 pounds in weight. Foods regurgitate mixed with mucus after they had been swallowed. Bowels constipated.

Patient consulted me July 28th, 1898, and at this physical examination showed heart and lungs to be normal. Swallowing sounds were present. Soft rubber tube met an obstruction 39½ centimetres from upper incisors. Smaller tubes would not pass the obstruction. Olive pointed sounds located but one strictnre at the cardia. After a test-breakfast the stomach contents were removed with a thin calibered tube with some difficulty. It showed a total acidity of 110°. A diagnosis of cicatricial stricture was made. Gradual dilatation by stiffer tubes was accomplished. After a medium sized tube could be passed, electrolysis was practiced as in case No. 1. The patient soon began to gain in weight and her improvement has been constant. Patient is still under my care and is receiving treatment every two weeks.

CASE 3. Mr. D., a clerk, consulted me for difficulty in swallowing. He gave the following history: He was always in good health until two years ago, when he was out with some young men, and being somewhat intoxicated at the time, drank a mouthful of sulphuric acid. He had no immediate trouble except a pain the œsophagus. This passed off in a few days. One year ago he noticed a difficulty in deglutition which seeemed to be continually getting worse. He had been having an œsophageal tube passed for the past eight months, yet with unsatisfactory results. I saw him for the first time March 5th, 1898. He was well nourished and complained of a dull pain and heaviness over sternum immediately after eating. There was great difficulty in swallowing heavy foods, such as meats and bread. Liquids pass down into the stomach quite easily. Physical examination gives

Digitized by Google

negative results. A medium sized tube meets an obstruction nineteen centimetres from the upper incisors. Electrolysis was given three times weekly and improvement was rapid. After four weeks of treatment patient was able to swallow solid food without any difficulty. Saw the patient in June, 1898, and he stated that he was feeling well. Have not seen him since.

The following points should be observed in sounding the œsophagus:

1. A careful examination should always be made so that an aneurism may be excluded.

2. A medium sized soft rubber stomach tube should always be the first tube introduced. Smaller ones, down to cat-gut, can be used if necessary.

3. Patience will accomplish more than force.

4. If upon the removal of a soft stomach tube we should find no mucous or blood clinging to the tube, then only is it safe to use stiffer tubes.

5. Trousseau olive pointed sounds are valuable in the locating of a stricture.

6. The distance of a stricture from the upper incisors is valuable in locating and determining the cause of the stricture.

7. As soon as a soft tube can be passed through a cicatricial structure, electrolysis can be employed. The negative pole in the stricture, the positive pole on side of xyphoid cartilage. Electrodes should be of greater calibre at each successive treatment.

The electrodes are made by The Hartz Company, Detroit, Mich.

Digitized by Google

DISCUSSION.

DR. PARKHURST, Middleville: I am very much interested in this able paper. There are some points about it and one in particular which it might be well to emphasize by an illustration—that of thorough diagnosis and careful examination. I was called to a neighboring town to see a young lady about a year ago. She was very much emaciated. She had been to Grand Rapids a few weeks for treatment and came home. She was diagnosed as having cancer of the œsophagus. Her deglutition was difficult. She seemed to be a very bright lady, from a prosperous family, a calm, cool reasoner, and I got this history from the patient, from the family and from the physician whom I met. The patient was at first able to swallow with difficulty and afterwards not at all; she was emaciated and for six weeks had been confined to the bed; she had for several weeks been largely fed rectally and was able at times, I imagine, although I didn't get that history, to take some liquids by the mouth. I examined the patient and passed a good sized stomach tube with ease into the stomach and began to look for other causes for the trouble. There was no closure here whatever. I found there was no paralysis, no obstruction. It was a neuresthenic case, the trouble was in her head. It was not reflected from the pelvis; the uterus and ovaries were in perfect condition. My diagnosis seemed to antagonize the patient and I was not, of course, called again. They continued to feed her as they had for a time. About a week afterwards, however, I was called to make an autopsy on the lady. She had hung herself to a joist in the cellar when the husband was out milking. I made the post-mortem and found the œsophagus to be in a perfectly healthy condition, found no lesions of the body anywhere. The trouble was all mental. I think that in these

Digitized by Google

cases we ought never to take the preceding physician's diagnosis as a basis of treatment but should always examine the œsophagus for ourselves and be thorough with it.

The doctor in diagnosing cancer of the œsophagus speaks of finding the typical cells as a means of clearing up the diagnosis. I would like to ask the doctor to define, so that I may understand it, what the typical cancer cell is. I have heard a great deal of discussion over it and have read considerable about it, but I have examined a good many cases of cancer only to find an aggregation of normal cells.

Dr. Bell, Detroit: I would say that I had some experience a few years ago with stricture of the œsophagus. I will relate the case: My attention was called to a german patient. In coming across the ocean he failed to swallow his food; after reaching this side of the water his condition became aggravated until he was unable to swallow any food whatever and starvation seemed imminent. When he could no longer swallow anything, not even liquids, he was operated on and an opening made in the stomach, somewhat similar to that of Alexander St. Martin, and was fed through the stomach, artificially. He was under my care and observation for several months. Finally he died from lobar pneumonia. We suspected cancer of the œsophagus but upon examination we did not find cancer, we found an impenetrable organic stricture of the œsophagus about 2½ inches from cardiac end of stomach. Electricity was not tried upon him. I don't know what effect it would have had. I think Dr. Aaron's electrodes (although I don't understand just how they operate) have some advantage over those made by Einhorn. I have used Einhorn's to a limited extent. In fact I have used them upon myself. I think there is some danger of some injury being done the mucous membrane, especially if the current is not used very judiciously, and the application or introduction can be more easily done by this method as shown by Dr. Aaron. The paper is an extremely interesting one.

Dr. Carrier, Detroit. The application of electricity in this diffused manner by means of liquid, it seems to me, would apply the electricity all the way from the pharynx to

Digitized by Google

the stomach, by this continuation of liquids or moisture all the way down, and the inquiry with me is whether there was sufficient action in the electricity to destroy anything in the connective tissues. In the treatment of cicatricial tissue, removal of it, by electrolysis, we are not in the habit of making applications to the surface. We accomplish more by the insertion of the needle into the substance of the cicatricial tissue. Of course I have had no experience with this and the question simply came to me as to whether with so much diffusion of the current we would get sufficient action at the one point that we wanted to use it. The cicatricial tissue, of course, is just the same there as it would be in any other part of the body and the effect of electrolysis could be predicted as to its effect in the œsophagus by its effect on the other structures. In the removal of keloid tissues we have had good results from the use of the needle connected with the negative pole in the substance of the keloid and not upon its surface. The only point with me was whether an electrode in contact with tissue would be any better than the diffused electrolysis by means of liquid. We can see, of course, the benefit to be derived in the absence of the danger of cauterizing it. I should think that this tube would be a valuable one for general application to the surface inside of the stomach.

Dr. Aaron: I have little to add to what I said in my paper. I agree with Dr. Parkhurst that it is of the utmost importance that a careful diagnosis be made in each individual case, and that another man's diagnosis should never be accepted. The case the doctor reported was either a hysteric or neurasthenic case of spasm of the œsophagus, and in all probability this patient could have been saved, providing the patient had been fed through a stomach tube and treated for the trouble.

Whenever we come upon cancer cells we find they are of the epithelial type, grouped irregularly in the alveoli. The cells are characterized by their large size and diversity of their forms. Their nuclei and nucleoli are prominent. They are easily seen under the microscope. The point is that we speak of them very carelessly, because they are not easily found. Frequently we think we have some of the tissue in

Digitized by Google

the fenestrum of the tube, but when we come to examine that tissue we find it is nothing but clotted blood.

The doctor mentioned applying electrolysis with a needle. When he applies electrolysis with a needle he destroys the tissue, but in applying electrolysis to soften interstitial tissue, we stop short of causing the destruction of the tissue. And then you know cataphoresis has been used of late in connection with galvanism so much that, if it is true as Dr. Carrier stated that this electricity permeates into the tissue beyond, it would be impossible for us to produce cataphoresis in the manner in which so many of the electro-therapeuticians have done it.

Dr. Carrier: I wish to make a correction. In the use of the electric needle we do not destroy tissue; our purpose is not to use it with a current strong enough to destroy the tissue. We do make the puncture with the needle; there is a traumatism, but the strength we use will not produce any further trouble than just simply the traumatism by the introduction of the needle. The object is to get an electrolytic action and not a destruction of tissue.

Digitized by Google

THE RELATION OF CLIMATIC TO OTHER METHODS OF TREATMENT IN PULMONARY TUBERCULOSIS.

H. M. DUNLAP, M. D.,
Battle Creek

Much has been written on the subject of climate in general, and on the special advantages to be found in the various localities in particular. There have also been many enthusiastic advocates of various non-climatic measures of treatment. Each writer, has, however, devoted himself so exclusively to his favorite theme, that the relative merits of other methods and theories, as well as the fact that we should not limit ourselves to a single method in any case, have in a measure been overlooked.

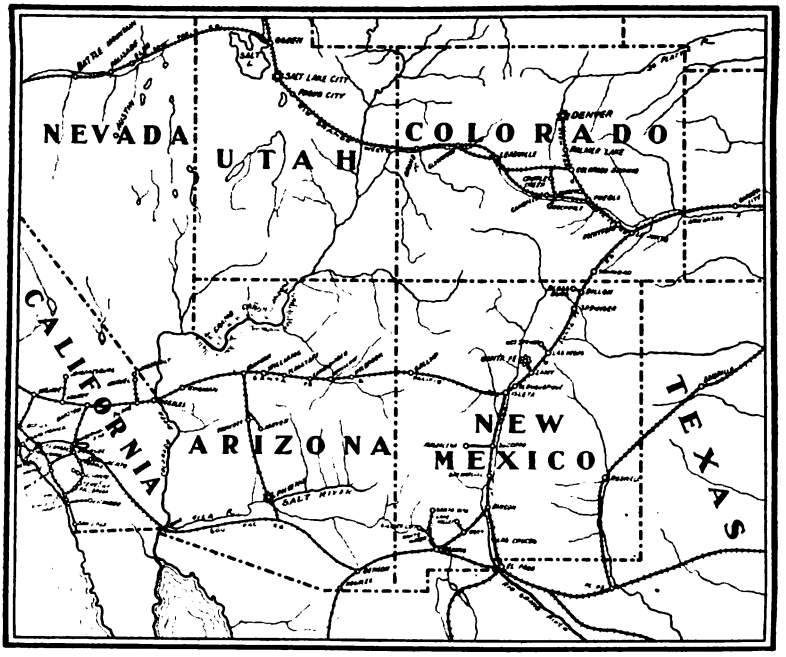
The fact cannot be too strongly emphasized that we should not only employ every available method of treatment, but should also give careful attention to the minutest details. This point has been sadly neglected especially in relation to climatic treatment.

From personal observation and conversation with resident physicians throughout Colorado, New Mexico, Arizona and Southern California, I find that many patients are sent to these regions, without any instructions whatever in regard to location, treatment, diet, or consultation with local physicians, except that in quite numerous instances they have been advised *not* to consult a physician. The above facts are true even in cases so far advanced that they should never have been sent away from home at all, yet have been sent away alone among strangers, perhaps without means, and with no medical advice and no comforts. This picture is not in the

Digitized by Google

least overdrawn, as I have personally observed many such cases.

We should acquaint ourselves with the details of climatic treatment, and should be familiar with the conditions present in different localities, as to altitude, sunshine, temperature, humidity, etc. While the various localities each have their advocates, there is no one place suitable for all cases, nor for any individual case at all seasons of the year. We will take for example the Salt River Valley of Arizona, in which the city of Phoenix is located, as shown here on outline map.



The altitude varies from two to three thousand feet, with higher altitudes in the surrounding mountains. The temperature is especially influenced by its proximity to the Gulf of California, while there is an abundance of sunshine with low humidity, making an ideal winter climate, but in summer it is too hot here, and for most patients a change becomes necessary.

Digitized by Google

As the season advances those cases who can stand an altitude of five or six thousand feet should move northward to the region of Prescott or Flagstaff, or still farther to the region of the Grand canon, where is found the most wonderful scenery in the world, to encourage an out-of-door life in the bright sunshine, and dry, rarified and sterile air.

The Rio Grande valley in southern New Mexico also possesses many advantages as a winter climate. The temperature is mild, almost any desired altitude may be secured, and as summer approaches patients can move up the valley northward, to Socorro, Santa Fe, Las Vegas with its famous hot springs and sanitarium, Raton and on into Colorado. In this way all the benefits of our great natural sanitarium are available throughout the entire year.

It is sometimes very difficult to decide as to the advisability of a change of climate, especially in cases where the disease is well advanced, for while not infrequently cases which are apparently hopeless make good recoveries, others seemingly less serious go rapidly downward. Much depends on the vitality and temperament of the individual.

In any case, if a change of climate is to be made, it should be early, while there is a reasonable chance of arresting the progress of the disease.

The objects to be accomplished in the treatment of pulmonary tuberculosis, to preserve the nutrition of the tissues already involved and prevent auto-infection of new areas. If these results are accomplished the disease becomes self limiting.

The methods we shall employ must vary in individual cases, and their relative value depends entirely on circumstances. We should, of course, employ the very best measures at our disposal. The most important point, however, is that we must not depend on any single method, but employ every available measure in each individual case.

Under favorable circumstances climatic treatment, properly directed is unquestionably superior to all other methods; but it does not, cannot, and must not, take place of other methods, but should be employed in connection with them. The

Digitized by Google

pure dry air is unfavorable to the growth of micro-organisms hence the tendency to auto-infection of new areas, and to mixed areas is greatly diminished, while the rarified air necessitates increased respiratory activity and tends to improve the pulmonary circulation and nutrition. In addition to the beneficial effects locally, the out-door life which is possible, in the bracing air and sunshine improves the appetite and general nutrition, and if other conditions are favorable, improvement is almost sure to follow.

Discretion should be used in recommending a change of climate. It is worse than folly to tell a patient that his only hope lies in a change of climate, when we know to a certainty, and we should know, that he has not the means with which to make the change and live comfortably. Many patients are sent away with barely enough means to take them to their destination, expecting to work their way. A few can do this, but there are so many of this class that it is difficult for them to obtain employment. They become discouraged and homesick and make no improvement, especially as all other treatment is usually given up. Such cases would be far better if they remained at home under such measures of treatment as might be employed to advantage. I have observed that these patients who are always hopeful when at home are very likely to lose courage when alone among strangers, and it is advisable, therefore, that they have a companion if possible.

Next to climate I consider intra-pulmonary medication and intra-pulmonary massage by means of compressed nebulized vapor, the most valuable treatment in these cases. It has this advantage, that it is available in almost every case and in every locality. In 1892 I read a paper before this society in which I recommended the use of nebulized vapor for this purpose. At that time a question was raised in reference to the possibility of medicating the smaller bronchioles and air vesicles in this way.

This point has since been settled beyond controversy by numerous experiments, and the value of the method has been abundantly demonstrated in actual practice. By this means,

Digitized by Google

the pulmonary tissues may be kept under the influence of antiseptic agents which, while they cannot destroy the encapsulated baccilli, yet go a long way toward preventing the infection of new areas by rendering the conditions unfavorable for the development of the tubercle baccillus. Under this influence also mixed infection with its accompanying symptoms is very unlikely to occur.

In addition to that application and other agents, in intra-pulmonary massage the compressed vapor acts mechanically, improving the pulmonary circulation and nutrition opening up collapsed air cells and occluded bronchi, favors expectoration, and tends to prevent excessive deposit in involved tissues, thereby diminishing the tendency to the formation of abscess.

Intra-pulmonary medication can be carried out by the patient at home, thus admitting a sufficient frequency of application, while intra-pulmonary massage should be applied by the family physician. This method will accomplish a great deal without change of climate, but should be combined with climatic treatment when practicable, though will produce better results alone if applied systematically than can be obtained by haphazard undirected change of climate without other measures.

The general nutrition should be looked after in all cases, and under all circumstances; this means something besides prescribing cod liver oil and hypo-phosphites. It means a constant oversight of the patient's daily life. Food, clothing, bathing, occupation and general surroundings should all receive careful attention. This cannot be done by turning the patient adrift on the plains of New Mexico or Arizona like a ship without a pilot.

We may safely say, therefore, that of all methods which have ever been employed in the treatment of pulmonary tuberculosis, climate is the most valuable, and if employed under favorable circumstances before the disease is too far advanced and in connection with other methods recovery may be confidently expected in a goodly proportion of cases.

Digitized by Google

WHAT SHOULD BE THE ATTITUDE OF THE MEDICAL PROFESSION TOWARD PROPRIETARY PREPARATIONS?

CHARLES C. YARBROUGH, M. D.,
Detroit.

This is a question of vital importance to the medical profession, and, although it has been discussed and re-discussed in various medical societies and in numerous medical journals, its solution has not yet been accomplished. It is high time some definite stand were being taken in the matter. This free and indiscriminate use of proprietaries is becoming a menace to the welfare of the profession, working as it is irreparable injury financially and professionally. I believe it is safe to assert that the great majority of physicians of this country have given the subject such little analyzing thought and study that they do not properly appreciate the true significance of the term "proprietary" in this application. Some physicians are caustic opponents to the professional use of proprietaries, many even letting their prejudice lead them to vituperative denunciations of this class of remedies without insomuch as making an exception. Others go to the other extreme and give heed to the extravagant claims of interested promoters and prescribe and sanction without distinction all ready-prepared and concocted compounds whatsoever. These two classes of extremists do not see that one proprietary differs from another, but class them all in the same category. Why is this great diversity of opinion? The answer lies in what has been intimated above, that physicians are too careless and indifferent about these preparations and

Digitized by Google

have not given the subject the proper thought that would lead them to definite and rational conclusions.

The number of proprietary preparations for which the physician's support is solicited and continually being urged upon him is simply prodigious. That all these preparations are worthless and without the sphere of ethical recognition is no more true than that all of them possess extraordinary virtue and may be used with professional impunity is true. Many of them are ideal preparations and are strictly in harmony with the spirit of the code of ethics; for while they are "proprietary" in the strict meaning of the term, are not "proprietary" in the odious sense in which this word has come to be used. They are manufactured, advertised and marketed in such a way as to be in perfect harmony with scientific and ethical physicians without a breach of professional ethics or laying themselves liable to culpability.

On the contrary, the majority perhaps of proprietaries are of such a nature that they are well characterized by the word "nostrum," and are worthy of the profession's severest condemnation and scorn. They are an insult to the profession, depending as they do upon mystery, credulity and secrecy for their employment. The physician's endorsements, written or otherwise, of these preparations, are solicited and obtained for the purpose of promoting their sale among the laity. The unscrupulous manufacturers of such nostrums are out for filthy lucre regardless of what methods are necessary to obtain it. Their principles are subservient to the desire to accumulate. What untold injury has been done the profession by carelessness of physicians in giving recognition to these unworthy and illegitimate concoctions.

A physician owes it to his patient to employ the most agreeable and the most palatable remedies possible, consistent with efficacy. The days of nauseating, disgusting, crudely prepared drugs are forever gone. It has been demonstrated over and over again that disagreeableness in medicine is not a necessary factor in efficiency. Physicians know this to be true. Their patrons have learned it and rebel at the idea of obnoxious mixtures, so much so that in employing a physician

Digitized by Google

strong preference is almost invariably shown for the one who gives his remedies in the most elegant and palatable form. It is enough for the patient to suffer the disease, without having to force down vile, nasty tasting medicine, when the same be administered in a palatable form with equal efficacy. On the other hand, the physician is indebted to his profession, and duty demands that he accord it the thoughtful consideration commensurate with its dignity and in keeping with the fundamental principle which has been instrumental in its being classed as one of the learned professions. Every time a physician prescribes a "nostrum" he antagonizes his profession's best interest. He adds one blot to the fair name of his profession, and every blot so added detracts from the honor and respect which it is his bounden duty to promote. The prescribing of "nostrums", semi-secret or secret, is a sad reflection on the physician's knowledge of legitimate materia medica.

Every pharmaceutical manufacturing concern has some one or more particular preparation, which it has made an object of special research and study and in the elegance and excellence of which it takes especial pride. Many of these preparations, although proprietary, are indispensable to refined practice. This leads me to seek a rational definition of the word "proprietary" and a better understanding of the subject to the end, that a rule may be formulated, by which a physician may be properly guided. I hold that the word proprietary in this connection signifies what it does anywhere else. It signifies some property in, but not necessarily exclusive ownership. For example, the "Columbia" bicycle is proprietary, the manufacturers of which own property in their special make of bicycle, but do not have exclusive ownership of bicycles in general.

Now, I would define a proprietary preparation as one that has a proprietor or owner—a person, firm or corporation that manufactures the preparation according to a certain particular method and who controls the output of the preparation made according to his or its *particular process*. The proprietaryship is based upon some peculiarity of composition or manufacture

Digitized by Google

upon a distinctive name (copyrighted or not) or upon a patent.

Proprietaries may be divided into three distinct classes: those of secret, semi-secret and non-secret composition. And these may be further divided into three subdivisions, according to the way they are offered for sale.

(1.) Those advertised to the laity only.

(2.) Those advertised to the profession only.

(3.) Those advertised both to the laity and profession.

I do not wish to antagonize in this paper any particular preparation or manufacturer and hence I hesitate to mention any selected ones as examples. My desire is to outline the correct underlying principles that should govern medical men in the use of proprietaries and leave it to each individual to draw his own conclusions as to the fitness and elligibility of particular preparations. However, illustrations add force to argument, and I hope I may be pardoned mentioning a bare few to make my proposition more perspicous.

To illustrate my classification :

Nervura is secret and advertised to the laity only.

Resinol is secret and advertised to the profession only.

Psychine is secret and advertised to both the laity and the profession.

Hood's Sarsaparilla is semi-secret and advertised to the laity only.

Sanmetto is semi-secret and advertised to the profession only.

Ozomulsion is semi-secret and is advertised to both the laity and profession.

Scott's Emulsion is non-secret and advertised to both the laity and profession.

Liquor Sedans is non-secret and advertised to the profession only.

Are not all these preparations proprietary ? Does not each firm own property in its respective preparation ? If not, why should they exercise such assiduity and spend large sums of money in advertising them to the best advantage ? Since these are all proprietary, is there a physician who cannot see

Digitized by Google

that, in important respects, one differs very much from another? None is so blind as he who will not see. Is it policy, not to say ethical, for a physician to prescribe proprietaries without distinction? On the other hand, is it just to denounce proprietaries without exception?

Now, it seems from this classification that it is an easy matter to select that class of proprietaries which a physician should prescribe and if a preparation cannot be brought into this class it is not worthy of his recognition and is not manufactured by its promoter for the physician of intelligence and learning. No practitioner will admit that it is rational and scientific to prescribe a preparation of secret or even semi-secret composition. This then narrows the question down to the point of strictly pharmaceutical preparations, including only those of which excellence of quality and elegance of preparation can be claimed. This obviates the brazen, unfounded and oftentimes ridiculous claims which are characteristic of some nostrum promotors, for intelligent physicians, knowing the composition of a preparation, know about what to expect of it. There is no dearth of elligible preparations. Of the many these may be mentioned: Gardner's Syrup of Hydriodic Acid; Chas. Marchand's Hydrozone; P. D. & Co's Euthymol; Stearn's Kasagra; Wyeth's Boracetanile, etc. The firms manufacturing these specified preparations do not have a monopoly of these remedies, which would, without patent rights, render them wholly unethical, but only possess such property in the preparations as reverts to them from excellence obtained by some peculiarity of manufacture. This however is considerable as their use indicates and the extensive advertising which it warrants.

From the foregoing the following conclusions are drawn:

A physician cannot consistently prescribe or sanction the use of any proprietary, whose active ingredients are not stated and their exact amounts given. Secrecy of active constituents is then the great dividing line. But there are a number of preparations, those whose composition is openly published, but are inelligible and unfit for professional recognition. These

Digitized by Google

comprise all of such nature, except those which are not advertised to the laity.

Now, who will dispute that this is ethical and scientific? If proprietaries must be prescribed, and there is scarcely a physician who does not use one or more in his practice, is not this a safe rule by which to be guided:

Do not prescribe or sanction the use of any preparation by the profession, which does not give an entire formula of its active ingriedients and their proportions, and is advertised only in professional channels.

Digitized by Google

THE EARLY RECOGNITION AND TREATMENT OF INSANITY AT HOME.

WM. M. EDWARDS, M. D.
Kalamazoo.

Among the many difficulties that the general practitioner encounters is the proper and to him satisfactory disposition of the cases of insanity which occur in his practice. Generally his first impulse and perhaps the wisest course in practically all cases, is to send his patient to an asylum as a relief to himself, to the friends and for the best interests of the patient. There are, however, often obstacles in the way of doing this that are only overcome after considerable difficulty and among these is the difficulty which sometimes attends the early recognition of insanity. We are agreed that early and correct diagnosis is most desirable in all forms of disease. To show that it is especially desirable and important in some of the forms of insanity, will be one object of this paper.

The difficulties in the early diagnosis of insanity are in many cases greater than those attending the common forms of physical trouble. Insanity is an obscure disease, often very insidious in its onset, and may exist for weeks or even months before its nature is suspected by friends, relatives or the patient himself and the advice of the physician sought. Friends often attribute to malice, perverseness or viciousness the irritability, moroseness, change of manner or temperament and the acts of cruelty or abuse that clearly are the manifestation of diseased mind when read in the subsequent light of established insanity. In like manner the family physician may be deceived or attribute to some co-existing fact, as bus-

Digitized by Google

iness or domestic cares or worries, manifestations that are he precursors or early symptoms of alienation. In some cases, the symptoms are so obscure that the physician is not able in the earlier states to satisfy himself of the character of the disease with which he has to deal and he may mistake it for hysteria, some form of nervous disease or even for some physical disorder. In fact, the physical and mental parts of our being are so interdependent and the somatic symptoms in some cases of insanity are so marked as to be in preponderance, and obscure the mental side of the case. Another difficulty the physician has in early diagnosis is the unwillingness of friends to admit to themselves the fact of insanity, and when forced upon them the disposition to hide or cover it up, if possible, as though it were a crime or disgrace. Again the attention of the doctor may be misdirected and result mistaken for cause. A young woman may manifest much morbid mental action and an anxious mother seeking a cause, discovers that menstruation has ceased. The doctor is consulted and strenuous efforts are employed to restore this function to normal action with the possible result of directing the patient's attention actively to her sexual apparatus and developing a case of active erotomania.

It is beyond the scope of a paper of this kind to detail the symptoms of the various forms of insanity, and I shall speak especially of two or three only. The cases of melancholia should particularly receive early attention from the physician primarily on account of the suicidal impulses that so frequently are present in this disease. Melancholia is, perhaps, the most common form of mental derangement and fortunately one of the most curable types, the majority of cases getting well outside of asylums and may without even consulting a physician. The difficulty in the cases that proceed to the more pronounced symptoms is the danger that the patient may take his life. Friends of patients are unwilling to admit or believe that there is any danger of such a termination to such a case and are confident because the patient can answer questions coherently and has the ability to reason, that such an act cannot be contemplated. The phy-

Digitized by Google

sician may be in doubt himself as to the exact mental state of his patient and his attitude toward his own existence. I can only say that experience has taught me that in no case, once the diagnosis of melancholia has been made, is it safe to assume that there is no suicidal tendency. The daily press records with frequency and regularity the result of the failures to recognize the importance of this symptom. Constant vigilance is the only safeguard in the pronounced types, and the physician must not be thrown off his guard by a rather sudden apparent improvement and cheerfulness that too often result from the patient having settled conflicting emotions and decided upon the course that he is soon to take.

Mrs. A. B., of healthy family, married happily, without apparent cause became depressed. The husband noticed that she was not so cheerful or active as she had been and discovered that she was worrying over their financial condition. Her husband had lately purchased a new house, going into debt somewhat, and as his business was of a character that afforded him little employment during the winter, she worried because he had no work and was sure that they would come to want. About this time he called a physician who, recognizing the condition to be one of acute melancholia, stated clearly the dangers attending the disease and advised that she be sent to an asylum for treatment. The patient's family objected to this course, first, because they think the doctor has overestimated the danger and that she will not do harm to herself, and, secondly, from the fancied opprobrium that attends residence in the asylum. She returned to her parental home to remain for a time, the physician not agreeing with the family, but reluctantly acquiescing in the decision and urging the most careful supervision. Her friends were soon satisfied that the doctor was wrong and they were right, as the patient apparently became more cheerful and decided to return to her own house and assume her domestic cares and responsibilities. The attending physician, however, protested very strongly against that, but in the face of his protest and despite all that could be done, she went to her own home. Her husband at this time had secured employment, and upon

Digitized by Google

the third day after housekeeping had been taken up in his house, left his wife in the morning when he went to work, in what seemed to be an unusually cheerful and happy state of mind. She talked and laughed with him as he was leaving, patted the horse that he drove upon the nose, and otherwise seemed quite cheerful. He had scarcely reached his destination when he was summoned to return and to bring the doctor with him. Upon reaching his house he found his wife dead, having committed suicide by strangulation. The cheerfulness was no doubt the sequence of a settled purpose in the patient's mind to commit this act.

This case may be taken as a type that is frequently found. From a failure to recognize the existence and seriousness of the mental disease or from a lack of appreciation of its dangers by the family, persons die by their own hands that under proper home or asylum care or supervision might have been restored to useful lives. Another danger that the physician who has the care of a melancholy patient must always consider in addition to the impulse to self-destruction, is that to destroy others with the motive of relieving them from great want or impending danger. The mother who is suffering from acute melancholia, believing that her children will surely come to great want or starve to death, or that some dreadful calamity will befall them, decides rather than that they shall suffer this, to take them out of the world with her, and as a result of this decision not only destroys her own life but that of her child. While this double tragedy is not of so frequent occurrence as suicide, yet, in certain conditions it is to be considered and carefully guarded against.

Cases like the foregoing might be multiplied from the daily papers, but sufficient has been said on this topic to emphasize the great desirability of the early recognition of melancholia to prevent, first, the patient taking his own life, and second, his destroying children or others with him to relieve them from a great impending cloud or danger that he fancies to be hovering over them.

While the early recognition of the various forms of mania is desirable, it is not so important from the standpoint of

Digitized by Google

danger to life that a diagnosis shall be made of this type of disease. Maniacal excitement is sometimes preceded by a period of indisposition, quietness and a degree of mental hebetude that almost amounts to melancholia and may in the earlier stages be mistaken for that disease. Sometimes maniacal patients develop in the earlier stage of the excited period a tendency to wander away or to travel, and the disease actively culminates sometimes when the patient is far from his home among strangers.

W. S., residing in Kalamazoo, had suffered from a degree of malaise for a short time but began to feel better and suddenly resolved to go to central New York to visit his childhood home. Almost immediately upon reaching his destination he became violently maniacal and, being among strangers, was taken into custody and locked up in the county house. Upon learning his whereabouts and condition, his wife was obliged to send for him much to her financial embarrassment and mental distress. The journey greatly intensified the patient's excitement and possibly prolonged the disease. An early recognition of the true condition would have avoided all the embarrassment and distress connected with this case. Another factor making it desirable that mania shall be early recognized, is the occasional apparent sudden development of violent tendencies with destructiveness and possible homicidal impu'ses. Ordinarily, however, the dangers both to the patient and his friends attending the development of this type of mental troubles are far less than in the depressed cases.

A third form of mental disease in which early diagnosis is very desirable, is general paralysis of the insane or paresis. It is probably more difficult to recognize this disease in its earlier manifestations than either mania or melancholia. In the first stage of the malady the symptoms are not always so prominent as to lead physicians to suspect the existence of mental trouble. There comes on a slow, gradual change of character and the approach of the disease may be so insidious that it is fairly well advanced before its existence is suspected. The expansive ideas that are a part of the delusions

Digitized by Google

of this type of disease are sometimes judged by those most intimately associated with the patient to be increased mental activity and business acumen. The patient's judgment becomes impaired concerning financial matters and he is very apt to tolerably early in the disease engage in impractical, foolish or visionary business enterprises by which money is lost and his family may be impoverished.

A. J., was admitted to the asylum with all the symptoms of paresis well marked. He had been a fairly successful small farmer and owned eighty acres of land free from any encumbrance. In addition to his ordinary farming operations he had each year bought some cattle and fatted them for the market from the surplus of the forage that he had grown, and if this were not sufficient, he had purchased hay and grain, so that in a small way he was a stock feeder. The first thing his wife observed in the course of his disease was that he was somewhat nervous. Following this he engaged more extensively in the purchase of stock, and so enthusiastic was he in his belief that a fortune was just within his grasp, that he convinced his wife of the practicability of his schemes, so that she consented to the sale of their property, which was invested in live stock without any very judicious regard for values, so that in a little while the entire proceeds of the sale were lost. About this time the more pronounced symptoms of the disease developed in rapid order. A physician had been consulted on account of the nervousness, who failed to recognize the true character of the disease. Had it been recognized, the wife and children could have been saved by proper legal measures from financial impoverishment. It is sometimes difficult in this disease to convince relatives of its existence in its earlier stage, or to impress courts with the necessity of taking proper measures to restrain the patient from squandering his property.

Owing to the early moral impairment in paresis, it is desirable that the disease shall be recognized to prevent acts on the part of the patient that sometimes become great scandals in the community. The citizen of high moral character who has always led an upright life and has been a worthy member

Digitized by Google

of society, all at once is found frequenting questionable places of resort, associating with drunkards and lewd women and altogether behaving in an outrageous and scandalous manner. This conduct, if happening, does not occur until there has been some considerable advancement in the disease and early diagnosis, followed by the proper measures for restricting the liberties of the patient, would prevent it. In some rare cases of paresis, irritability is so marked in the early stages as to lead to assaults and the commitment of dangerous acts on the part of the individual afflicted. This, however, is much less likely to happen than the dissipation of property by visionary investments or speculation. It is very desirable that this disease shall be early recognized, first, that foolish business ventures and impoverishment of family may be prevented; second, that the family may not be made to suffer by reason of immoral acts; and third, that dangerous assaults due to irritability, may not occur.

A recent writer, H. C. Bristowe, Journal Mental Science, January 1899, says, "In private practice the treatment of an insane person is essentially the treatment of his friends. Many patients who become hopeless dements might never have been lost to the intellectual world, had their friends been persuaded of the necessity of prompt and active treatment. I cannot over-estimate the dangers of delay both immediate and remote." The physician who is convinced that asylum treatment is necessary for the best interests of his patient, often has serious obstacles to overcome before this treatment can be obtained. In case of communicable diseases, the patient can be at once sent to the detention hospital or quarrantined without any legal process. However, in case of insanity, before hospital treatment can be secured, there must be due legal process. Fortunately in Michigan now no patient need long wait for this process as the law permits a judge of probate to send any patient to the asylum in the district where he belongs upon the certificates of two physicians. These emergency orders are valid for fourteen days within which time the case can be heard and properly adjudicated.

The home treatment of cases of insanity must in the

Digitized by Google

majority of instances be unsatisfactory. Only the homes of the well-to-do are so arranged that the patient can have anything like the proper physical surroundings, and only in such families can the necessary skilled attendants be provided. In home treatment the physician's time is very often consumed in preventing or counterbalancing the injudicious acts of relatives. The anxiety of friends for improvement, their helplessness in the presence of mental disease, or other cause often leads them to resort to measures that would uot be thought of in any ordinary physical trouble. The physician will sometimes find that a single injudicious act has destroyed the results of treatment, just as we find in asylums that an ill-advised visit from a relative will often cause a relapse in a case that is apparently progressing favorably. It is difficult for the physician to impress upon relatives the danger in melancholia, and he will be told that the patient does not really intend to harm himself and notwithstanding all his advice, in many instances the daily press will record the unfortunate termination of the case. Sometimes the physician will find the friends utterly refusing to permit the removal of a relative to an asylum for treatment, when a residence of two or three months therein would restore them to mental health and useful lives. Such cases are kept at home until the golden opportunity for cure is past, and when they become chronic, friends are then very willing to be rid of the burden of supporting them, I cannot do better than to quote from the writer before mentioned, a general practitioner, who says, "My experience confirms me in the belief that the proper treatment of insanity can only be conducted satisfactorily in asylums. Where wealth is at command, of course, much may be done by careful home treatment or well regulated travelling, but how much better asylum treatment is can only be judged by those who have known both. Where wealth is wanting it is appalling that the prejudices wrongfully attached to the name of 'Asylum' should cause so many hopeless cases. To the general public the lunatic asylum has a portal over which is written the dread motto, 'Abandon hope all ye that enter here.' We may in the course of years teach people

Digitized by Google

the real nature and the value of these institutions, but, meanwhile, it is this difficulty of a name which fetters the action of the general practitioner and causes an accumulation of the chronic insane."

It is an unquestionable fact that most cases of insanity improve more rapidly away from their home surroundings. There is something arising out of the daily contact with environment that through long years of association has become familiar in all its details by which the mind is worn threadbare, so to speak, and improvement is more rapid under new and strange conditions. The insane patient who has given almost endless trouble at home by reason of restlessness, destructiveness and rebellious acts, often subsides at once upon entering the asylum and becomes a quiet member of its house hold.

Of the actual management of acute cases of insanity in private houses, very little can be said except in the most general terms. The indications are to improve nutrition, promote sleep, increase the secretions, subdue restlessness, prevent destructiveness and ward off suicidal and homicidal attacks. Many cases will be found to be obstinately constipated, the liver and kidneys often failing to perform their functions properly and there will be a blocking up or retarding of the excretory functions. In the earlier stages a good alterative is often desirable. This may be followed by cathartics or laxatives and in many cases it will be found that the use of these latter must be continued from day to day for a time at least. In nearly every case of insanity a serious trouble is to induce the patient to take a sufficient amount of food. This must be presented in a variety of ways in as nourishing, appetizing forms as possible and great insistence must be had to induce the patient to eat, not only what would ordinarily be a normal amount, but in many instances much more than this. Sleep may often be promoted or secured by having the patient drink upon retiring or when wakeful at night a cup of hot fresh milk. For restless cases in the early stages, a hot wet pack will often induce sleep. This can be administered without very serious trouble in the ordinary

Digitized by Google

house. If a rubber sheet is at hand, the bed may be protected by that and a blanket spread over this, the patient is stripped and a sheet wrung out of hot water as can be borne in which the patient is completely enveloped and the ends tucked around the feet and tightly around the neck. He should then be quickly rolled in a blanket and towels wrung out of very cold water, or if ice can be had, this may be applied to the head. The patient may be left in this pack, owing to his strength, from ten to thirty minutes and will often fall asleep and secure several hours of refreshing rest.

In the treatment by drugs, I would caution against the employment of opium in any form on account of its liability to disturb digestion and nutrition. The bromides and chloral while, perhaps, less harmful than the opiates, are, if used in long and considerable quantities, very likely to be harmful for the same reason. The results obtained from the use of hyoscyamus are frequently very disappointing. Sulfonal and trional hold the highest places in my estimation as hypnotics, the former being especially useful in cases of acute mania or in forms of alienation marked by extreme restlessness. The administration of trional to melancholiacs is a desirable hypnotic, as the after effects are not nearly so noticeable as in other drugs. Sometimes a combination of sulfonal and trional works admirably, the latter tending to produce sleep quickly and the former to continue it. Some one of the more stable forms of Kola will sometimes relieve the mental distress in depression. As before stated, more reliance must be had upon measures calculated to promote digestion and assimilation and build up the patient's physical strength. Diet, bathing and exercise skillfully and properly employed give more promise of curative effects than the employment of powerful drugs. Many cases of restlessness and insomnia affected only slightly by large doses of drugs pass off into natural sleep of surprising duration after a hot tub bath or wet pack accompanied by liberal draughts of hot milk.

Digitized by Google

DISCUSSION.

DR. DAVID INGLIS, Detroit: Mr. Chairman, I regret that I did not hear the early part of the paper. I simply rise to corroborate what Dr. Edwards has brought out so clearly, and that is the practical impossibility of carrying out any successful therapeutics in mental diseases at home. The fact is unquestioned that at home an amount of restraint seems to be absolutely necessary, which in an asylum is done away with. The whole secret, as I take it, of the asylum success is largely found in the quelling power of the discipline of the institution. I think that every member of the medical profession cannot become too familiar with asylum life. I know that it is my habit every year to take the senior class in the college through the asylum at Pontiac, that being the nearest one, for it has been impressed upon me, year after year, that physicians ought to have a full appreciation of the methods employed in the asylum for managing these cases, and nothing is more striking than to witness the way in which a violent patient will quiet down in an incredibly short space of time upon entrance to the institution. Patients are brought to the institution held by three or four or five men, having given all kinds of trouble before being brought there, and inside of forty-eight hours they are simply put in what is known as the "disturbed ward," and that word "disturbed" is an accurate word. When I bring my class out to the asylum it is very common for them to say when we go through the disturbed ward, "Now these people are a little bit noisy, but where do you put your violent patients?" And they cannot be made to believe that those are the violent patients, that is, as violent as they are. It is that influence that the asylum has, which, it seems to me, we, as a profession outside of the asylum, cannot too clearly appreciate, and every day's experience in my hands has led me to believe that it is in almost

Digitized by Google

all cases infinitely preferable to get the patient to an asylum early. It is pre-eminently so in cases of melancholia, and yet it is in cases of melancholia that the friends interpose the greatest possible objection to removing the patient. The friends say "the patient is downhearted, he is low spirited, but he understands perfectly where he is; he reasons well enough and if you take him to an asylum he will know he is in an asylum."

Certainly he will know he is in an asylum. I can simply say this, that if any person in life near and dear to me, no matter how near, should have any signs of melancholia, from all of my observation, I would take that patient to an asylum with all possible speed, simply for the reason that I would give to that person the best opportunity for recovery.

What the doctor has said about treatment outside has practically covered the ground, and from all my experience I simply get my patients into the asylum as rapidly as I can, because I feel the practical impossibility of getting any satisfactory results outside.

Dr. Osborne, Kalamazoo: I did not have the pleasure of listening to the first part of Dr. Edward's paper, but knowing something of the substance of the paper, I would say that my experience for a good many years led me to change my mind materially in the management of the acute insane in private practice. There is first a difficulty to overcome in impressing upon the minds of my friends the necessity of such a radical change as removing the patient from his home and his home environments. The second, as the doctor remarked, is the stigma that is attached to the fact that he has been an inmate of an insane asylum. What of the stigma, what of environment, compared with the possibility of recovery? I remember a recent case here in our own place, a party who was simply suffering from melancholia apparently—a sighing and crying, and everything was going wrong, nothing was right. After examining the patient it was found that for a period of about two weeks there had not been but one or two consecutive nights in which four hours sleep had been obtained. The doctor said to them "The only place for this patient is in the

Digitized by Google

asylum." "Oh, no, that cannot be possible, you musn't put that patient in the asylum." "Why ?" "Because of the harm she might do you or herself." "Why, that patient wouldn't harm a fly. That is all nonsense, maybe you think you know something about this case, but when you talk about the asylum you are 'talking through your hat'." Under the influence of sulfonal and trional we got a few night's restful sleep, the patient seemed to be delightfully calm and hopeful in the presence of her friends, but in less than five minutes after the disappearance of friends and the watchful care of friends, a noose was slipped about her neck and she was found twenty minutes afterwards hanging by the neck, dead. Such calmness, such resignation, such delightful looks of resignation and comfort coming over the face of a person who has been lately disturbed is somewhat the result of the completion of a plan, as a rule; they have formulated that plan and purpose carrying it out at the first opportunity; they have got their minds at rest and when the opportunity comes they are going to do it, and, hence, quiet. My experience goes back a good many years and I cannot say that it has been a pleasant one, simply from the fact that the laity have not been properly educated, neither has the country practitioner or the general practitioner, whether he is in the country or the city, as a rule, on the necessity of removing his patients.

I remember wading through the snow five or six feet deep one night to go into the country to see a person who was insane, suffering from loss of sleep, through some religious excitement, and he couldn't sleep until he saw me, and so I waded through the snow and got to the house. The man was a German. The family were all standing around against the walls watching to see what the man was going to do next, with two or three men holding him in bed. He said, "Come closer now, doctor, I want to talk with you just a minute, I want to whisper. Every man in this room get out, I don't want anybody in this room but the doctor." They all stepped out of the room, and as I held my head down close to hear what he had to say, he had his mouth full of salvia and he spat it full in my face. I didn't notice even, apparently, the

Digitized by Google

fact that he had spat in my face and said "What is it, John, you want to say ?" The man saw that I offered no resistance, showed no anger at the insult he had put upon me. He grasped his pillow, turned upon his side and drew his pillow over his face, and as he did so under his pillow laid a large carving knife that he had sharpened that day—very sharp so that it would cut a hair, and he had made up his mind he would call for me in the night, that his soul would surely be dammed if he couldn't make some blood atonement, he would get me up there and spit in my face and I would box his ears or choke him and then he would put that butcher knife where it would do the most good for his soul's salvation. This man got well and after he got well he said, "Doctor, just that one thing, that you didn't get mad with me that night, didn't pull my hair nor box my ears, didn't do anything only just look as good as you ever did—if you had been mad, you would not have been here to-day to hear me tell this story, I was going to kill you."

These are simply two examples. When you find a person who is apparently well and that person has some great secret to tell you and gets you off somewhere to tell you, no matter whether he is walking or in his bed, and tells you of some person heaping some great abuse upon him, that is the very time for the doctor to lead him on and cross-examine him, and you will get a history that will furnish a diagnosis that you will not get in any other way.

The paper is a valuable one and one that all of us should carry away in our memories. I think we owe the doctor a vote of thanks for his paper.

DR. EDWARDS: Mr. Chairman, Ladies and Gentlemen: There is much more that might have been said in a paper on the early treatment of insanity, but there is very little more that I can add now. You will recall that nothing was said in the paper of the surgical treatment of mental disease of which we hear much. My experience of more than fifteen years in this asylum has convinced me that many people are led to believe that a great deal can be done for insane women by surgical interference. I wish to be understood clearly that I

Digitized by Google

am in most hearty accord with that interference which has for its object the correction of all pelvic disorders of whatever kind that coexist with mental troubles because we recognize their powerful influence upon the nervous system in health and that influence, of course, is exerted in disease. We occasionally hear of cases in which the ovaries of insane women are removed that they may be cured of insanity. The impression made by the operation itself, or, what is probably more likely, the very close and careful personal attention given the patient during convalescence from an operation, causes a very marked improvement in the mental condition. Many such cases, however, that appear to be recovered at the end of two or three months at the end of six months or a year have relapsed into their former distressed condition. It seems there has been some revulsion from the feeling that existed eight or ten years ago in favor of the general operation upon the pelvic organs of insane women for the cure of insanity, operations that were earnestly advised by specialists in the diseases of women, some of whom were very prone to criticise that portion of the profession that has to do with insane people for not imbibing more of their enthusiasm. There seems to exist at present, as Dr. Manton has told you, a sort of golden mean between the conservatism that existed on the part of some asylum people and the extreme optimism on the part of some surgeons.

In this asylum two years ago we asked the legislature for an appropriation with which to construct a hospital in which to treat our acute cases among women. This building of plain exterior which you have noticed upon the grounds, is planned as well as could be done for the amount of money appropriated for the purpose of receiving and treating all acute cases that we think may be relieved or cured. We take these patients into the hospital, put them in bed whether they are physically sick or not, give them a special nurse or attendant or more than one, if required, and treat them in every way as hospital cases. They remain in bed a day or a week or a month or longer, as the case may indicate. They receive special attention in the matter of diet and have the benefit of

Digitized by Google

hydro-therapy and electrical treatment and, in fact, we use all the appliances at our command that may in any way tend to their relief. Already the reputation of our hospital has somewhat spread abroad and I was much gratified a few days ago to have an application for the admission of a patient not to the asylum, but into the new hospital. I think that the asylums that have not already done so, must sooner or later be prepared to construct special buildings in which to care for their acute cases.

Speaking from the standpoint of experience, a great many people come to this and other institutions who are not curable cases. They are very old people, the worn-out physical rubbish, so to speak, ready to be laid away. Within a week we have received on one day a woman patient 84 years old, the next day one 78 years old and upon the third day we had an application to admit one aged 93. There will come in your practice occasional difficult questions to decide in relation to such cases. Often the presence of these restless, old people who in their minds revert far back to their childhood, and who have reached a mental condition in which their homes where they have lived twenty, thirty and forty years, are no longer their homes and they are anxious to get away, to return to see their parents who have long been dead, and become exceedingly troublesome and difficult to manage in a private house, and I think many of them very properly ought to be admitted to the asylum. I do say, however, with much regret, that it has been forced upon me quite a number of times, that quite a large number of old people whose period of usefulness has been exhausted, are very readily and willingly sent to the asylum or otherwise cast aside by those whose apparent duty it should be to care for them at home. In one sense this is a pleasure as it shows that the citizens at large have more confidence in our public institutions now than formerly. I believe our asylums are regarded with a great deal more confidence than they were twenty years ago. They are no longer looked upon as horrible places of detention where great cruelties are practiced, but by those whose minds are normal and who are competent to judge, they are

Digitized by Google

regarded as comfortable homes for the treatment of this very distressed and defective class of our population. What Dr. Inglis has said about the comparative quiet of the asylum is often brought to my mind. We today have 1308 patients and thus far, I think, you have heard no shriek or yell and yet you are within a stone's throw of some of the wards for the more disturbed cases among women. There are, of course, some persons who are restless and uneasy and noisy, untidy and destructive in their habits, but as a rule, the troublesome patient soon after coming to an institution of this kind, becomes quiet and falls into the ways of the place. In the paper I read, I spoke of asylum treatment, but I do not think that the asylum has in itself any inherent advantages, nor asylum physicians any skill that other people may not possess. Of course, we have here what has been accumulated by long experience. Each summer as people grow weary and tired, they go to Mackinac or elsewhere for rest and recreation and there is that instinct within us to occasionally get away for a time from work and to go to new surroundings and new scenes. So with insane persons; often as they go away from their homes among strangers the change of scene or life will help them to a better self-control. The insane individual when admitted to the asylum, comes into an atmosphere where everything is methodical. Patients arise in the morning at a certain signal, they go to breakfast, dinner or supper at a given time, and soon the person who has been obstreperous and difficult to manage at home, falls readily in with the way of things as sane persons do. Just as a boy who is almost incorrigible goes to a military school and finds that upon the blowing of the bugle in the morning that every other boy is out upon his feet, a little later the bugle is blown again and these boys file down to breakfast, and again upon a signal they are out for some exercise, and the boy who has been the trial of his home and tribulation of the community in which he lived, soon, unconsciously almost, falls into the methodical way of life. So it is with the disturbed person who comes to the asylum and becomes a unit in a large in-

Digitized by Google

stitution and very soon quiets down and becomes a useful member of the household.

The patients do quite a little work around the institution. No doubt you saw squads of patients at work as you came in, but you do not see as many this afternoon as you would on an ordinary day for the reason that this is a sort of half holiday and the nurses and attendants are ready to do something else today at your request, but ordinarily you will find patients engaged in all sorts of work. Were I to be compelled to choose today in the light of my experience, between drug treatment and manual employment for the cure of the insane, I would very readily choose manual employment.

Digitized by Google

MORAL IMBECILITY.

DAVID INGLIS, M. D.,
Detroit.

The paper I will present to you is a short one. It was suggested to me by a recent case in my experience. One of the cases which I will report in the paper itself led me to give testimony in court in regard to a man who had committed a brutal murder, and I was afterwards informed that a professor in the law school had taken my testimony and made it the subject of a lecture before the young lawyers and had seriously opposed the views which I held in regard to the responsibility of the man in question. That led me to think that if he were right, I must be very seriously wrong, and if he were wrong, then it was high time that the people should reform their opinion in regard to these cases, and inasmuch as the reformation of public opinion in regard to these matters must necessarily come through medical men, I felt that by presenting this matter to you I could indirectly influence public opinion; as it seemed to me public opinion needs to be influenced. The subject is "Moral Imbecility."

Some recent experiences in court have led me to believe that there is a certain necessity for the presentation of the facts in regard to moral insanity, and I hope that the brief presentation which I here make will elicit a discussion of the question by others whose opinions will carry weight with the profession at large. I believe that I will find support for the views advanced.

Let us begin with the elementary facts.

Our whole educational system is based upon the idea that every normal human being is, by nature endowed with many

Digitized by Google

and varying capabilities. The capabilities in the uneducated are, many of them, undeveloped, but they are present nevertheless. Different individuals show marked variations in their natural capabilities. Some are apt students in the languages and dull students in mathematics, some are the reverse, but in the normal man, a student, even if he be dull in mathematics, can by strenuous effort and steady application finally acquire a good working knowledge of mathematics. Indeed the great value of a proper education lies in its power to train the individual to learn and master, not so much that which is easy to him but that which is difficult.

Education, properly understood, is the process by which the mind is led out to know the various capabilities of the normal human mind and is trained to concentrate attention so as to master one or other capability at will. Underneath the whole system lies the recognition of the presence in the average child, of all sorts of capabilities. There are many mute, inglorious Miltons, to be sure, but the possibility of poetical feeling and poetical expression is common to all normal children.

This unusual prevalence of the capabilities, common to us all, is the foundation of all laws as to human responsibility. It being presupposed that the average man has the average power of reasoning from cause to effect—of appreciating the relations of acts and their consequences, of recognizing, therefore, the social relations of acts and consequences which we summarize as a knowledge of right and wrong. The law holds all men responsible for their conduct. Men differ by natural ability and by training in the readiness with which they can carry on these mental processes, but if they have within them the capability of doing these things the law makes no excuses. It goes upon the principle that a man can, by effort and attention, cultivate his appreciation of right and wrong conduct just as he can master algebra. And it holds him responsible if he fails to master his capability. But the law has come to recognize clearly that all men are not able to recognize the relations to their fellows which involve right and wrong.

Digitized by Google

A man who is adjudged insane, that is, of unsound mind, is held to be not responsible. It was a considerable step when we got rid of the idea of demoniacal possession and accepted the idea that the insane patient was afflicted. but not criminal—that, while society needed to be protected from the violence of an insane patient, it should restrain him in kindness, not in vengeance.

This general principle is now fully accepted, but we have still to fight for a recognition by the courts of the scientific limits of unsoundness of mind.

If it can be substantiated in court that a patient has hallucinations, illusions or delusions, the court will readily accept the plea of unsoundness of mind, notwithstanding the fact that sane people have occasionally hallucinations or illusions, but when the plea of moral insanity is raised courts are apt to be incredulous, if indeed they do not deal severely with the alienist who maintains that moral insanity exists and that it certainly absolves the patient from moral responsibility for his conduct. What, then, are the facts upon which we build the doctrine of moral insanity? They are primarily such physiological or psychological facts as these.

A color-blind man is no rarity. Such a one can see objects—is in all other respects normal, but he is utterly unable to distinguish some, or in rare instances, all colors. This is not an instance of an undeveloped capability, but of the absence of a capability common to normal men. No amount of training of effort, of attention, will enable the color blind man to distinguish colors. This being so, no one color rightly holds a color blind man responsible for not seeing colors.

Now this color blindness is the most common instance of a certain very limited but very definite defect in the brain of a patient whose mental development in all other respects is perfect.

Standing alone this illustration is valuable, but, while the most common, it is not the only instance of limited defect in a mental organization otherwise sound.

Digitized by Google

I happen, personally, to be subject to an analogous difficulty. I am face blind. I can by no means recall to my mind the memory of a face. I have no mental picture of the faces of those nearest and dearest to me. I do not see faces in my dreams. Necessarily such a defect is a great drawback for I am continually in difficulties from failure to recognize acquaintances. No training, no voluntary effort has apparently any power to correct the defect. It is again not a faculty untrained but a faculty lacking. That such a limited defect is possible is shown by the phenomena of word blindness. The memory for words as seen by the eye is lost. The memory of all other visual objects meanwhile being retained.

Similarly certain aphasics have lost the ability to recall nouns while able to recall and use all other parts of speech. Closely allied to this is the imperative impulse to rehearse names.

So the list could be extended. These and similar phenomena demonstrate the fact that the mental organization may be perfect in all respects, save some limited and isolated function, but that as far as that function is concerned, no possible training can correct a defect which is as real and definite as an amputated leg.

I have mentioned these isolated defects because they are indisputable.

Normal individuals have the power to recall images of past impressions of all sorts—in our ordinary mental processes we combine the images of past impressions with the more vivid impressions of the moment and so guide our conduct by new sensations and the more or less vague memory of old ones.

In children the images of past impressions are apparently much more vivid than in adults. We say, "children are imaginative." Some children recall memories of past impressions so vividly as to equal present impressions. Such children are apt to be punished as little liars, when the fact is that they are confused by the intensity of the remembered impressions. When an adult has an imagination which plays

Digitized by Google

tricks by recalling memories of past impressions so vividly as to equal the intensity of a fresh impression we say he has an hallucination, and if his imagination combines some present impression with an equally vivid memory of old impressions, we say he has an illusion.

If he be unable to disentangle the vivid memories of old impressions from present ones and accepts all as equally reliable, bases his judgment accordingly, we say he has delusions, and the courts have a profound respect for delusions.

Again we are dealing with instances of limited defect in a mind capable of carrying on other processes well enough.

To be sure, the courts like to have the hallucination, illusion, delusion of a pictorial sort. The man who sees snakes or imagines flames mounting from the book case, the one who talks calmly of having $83,000,000 in the savings bank is accepted readily as of unsound mind.

The paranoiac who slowly and systematically builds up a connected series of delusions based upon imaginary slights, upon actions and remarks which he misinterprets, upon his own successive failures, whose promises are hallucinations (but not of a pictorial sort) but whose logic is excellent—such a patient the courts very reluctantly recognize of unsound mind. The difficulty arises from this: Ordinarily a logical mind is an admirable mind. So the persistence in a paranoiac of the logical faculty impresses the courts and the laity to the conclusion that the mind must be sound and the individual responsible.

Nevertheless the paranoiac is merely another illustration of an incurable but limited defect in the mental organization.

Now the defect in the organization may be of still a different sort, but again a limited flaw in an otherwise unusual mental organization.

The patient may simply be lacking in appreciating the relations of acts and their consequences as affecting social relations.

To make this clear it perhaps should be recalled that man is by nature a social animal, but there has been in the race, and is in the individual, a gradual evolution from the indi-

Digitized by Google

vidual to the social relations, and, mark you, this evolution in the individual may stop at any point. The lowest savage is a pure individualist, he is purely selfish and his self ends with his own person. The first upward step is when the savage learns to love his wife, he has enlarged his conception of self. Self now includes wife—children, later the idea of self comes to include a constantly enlarging circle of people about him—his family, his clan, his tribe, his race, his country. Now a man may develop mentally to appreciate the relation of acts and consequences as regards his individual self, yet fail to develop, may not have within him, an appreciation of the relation of acts and their consequences as regards those about him.

He now deviates from the type of his fellows—his conduct is anti-social, yet if the defect is inherent, if it cannot be developed by training and effort and experience he is as little responsible for his conduct as is the color blind man or the subject of delusions.

Yet it is precisely when a man's conduct concerns his social relations that the idea of right and wrong come into action, and it is precisely at this point that the law takes cognizance of conduct.

The whole question of morality is a social question, and moral insanity is social insanity. It is because of this that the courts and the laity look with doubt upon the idea that a man may be otherwise normal yet morally insane. Nevertheless, as scientists, we must maintain that moral insanity is a fact in psychology.

The law must adjust itself to the facts sooner or later for the facts cannot be changed.

As illustrations then of this phase of mental defect I desire to present the following :

There is in a certain asylum a child of eight years of age whose father is an industrious man, and whose brothers and sisters are normal and admirable children. This girl is physically well grown and well formed. In the public school which she attends she makes average progress in her studies. She is fond of singing and sings well. To all appearances

Digitized by Google

she is a normal child, yet she is a source of endless and hopeless perplexity to those who are bringing her up. The matron appealed to me for help. She said, there is absolutely no way in which I can appeal to her. She steals and lies persistently and to no useful purpose. I have utterly failed in trying to appeal to her pride, her fears, her morals. She seems to have no sense of right and wrong. Emulation does not touch her. Shame is an unknown sentiment to her. Praise, rebuke, reward or punishment are alike to her. On one occasion the children were all eagerly planning for a special excursion. For bad conduct she was threatened to be kept at the home while all the others went off to a specially happy event. It was a matter of entire indifference to her and when, on the eventful day, she was left the sole child in a great house, she waved a genuinely cheerful adieu to the other children as they left. For a time the other children were forbidden to play with her, but it was no punishment, and the attempt was given up lest she should lack all development from her isolation—an isolation in the midst of many active children, yet she was perfectly contented. When detected by her playmates in her thefts she has no sense of shame, and every attempt on the part of her caretakers to punish her falls powerless. She has neither shame nor dread, cherishes no resentment, but will put her arms around the matron and kiss her good night with calm and pleasant equanimity no matter what the day's attempts at punishment had been. On one sole occasion does she seem to have grieved over her short-comings. One of the older children acting as monitor in the dormitory threatened to mark in a book every time she broke the rules. Usually this made no impression on her, but the child on one evening refrained, for an unusually long time, from breaking the rules, then did so, and when the monitor said, "I'm sorry, but I must mark you," the girl cried. The matron and teachers took courage, felt that at last the ice was broken, but this event as yet remains isolated. The child is happy, contented and well, but is morally thoroughly defective. That the defect is inherent, not due to environment, is manifest from this: An older sister of our

Digitized by Google

patient, brought up in the same place, same environment, is a girl of fine character and normal moral development, and while there are all sorts of children in the place, good and bad in varying degree, this girl is entirely unlike the rest, she does not respond to the motives and methods which move all the other children. Nothing can awaken in her any appreciation of the relation of acts and consequences as regards those about her. She is a pure individualist. She is a revision to the type of the most primitive man as regards her moral standards. It is a most interesting problem to try to imagine her future life, and we can easily imagine how helplessly she will be the victim or beneficiary of her environment.

It is but one step further to the following case:

In December, 1898, J. B., who was employed in doing chores about a livery stable, had been drinking with his fellow employe. They returned to the barn; the fellow employe went and lay down—fell asleep. J. B., who was sitting near by, got up, took an axe and chopped the sleeping man's head open. The two men were in the habit of drinking together —were on friendly enough terms and had had no special difficulty, although the men about the barn were in the habit of bantering J. B.

The murder was brutal, causeless and apparently unpremeditated. J. B. was easily apprehended at some usual resort and when arrested simply denied any recollection of what had happened. He was confined in the jail and tried on March 9, 1899.

I was deputed to examine him. Found a man of rather slender physique with an abnormally small head but no marked abnormality of lobes of ears. He talked freely enough. Of course there is no certainty about his veracity, but as his story goes, he is the son of a well and well behaved family—respectable, decent people. He grew up as the black sheep in the family, a "ne'er do well," a half-witted fellow who never could fill any real place in the world's work. In early life masturbated freely, later indulged in sexual and alcoholic excesses with no apparent effort at self-control or moderation. He had, in his boyhood, gone to school, kept

Digitized by Google

pace with his classes in the earlier years, but quit school early, so that his education was limited. From this time he never filled any useful position. What little work he did rose little above doing chores and odd jobs. He could never be depended upon, and worked under orders and under supervision. Set to clean up a garden on one occasion, he robbed the fruit trees in broad daylight; started to carry away his bag of fruit although he had no home to go to and must have known, had he ordinary sense, that he was sure of detection. Stopped, as he was going off, he exhibited no sense of shame or regret. Simply went on his way as a dog might have done under similar circumstances.

As far as can be learned he had no religious feelings at any time; his life was desultory, idle, and largely solitary, except when he joined with others in dissipation. During his confinement in jail he was quiet, contented, solitary, made no friends among the other prisoners, made no attempt to gain the good will of his keeper, was persistently indifferent, made no show of any peculiarity.

During his trial he was similarly indifferent. He showed neither during the trial nor during the medical examinations any emotions when the murder was discussed. As far as any feeling of horror, regret, remorse or interest of any kind was exhibited, he again showed as little as the cat does after killing the canary. One might say that he was so drunk when the crime was committed that he had no recollection of the murder but, even so, he manifested no concern at being on trial for murder and no regret that his companion was brutally killed.

Here was again an entire lack in the moral sense. The case is really more easily understood than the case of the little girl just related. In this case there was more than moral imbecility, there was a general mental defect. The man was an imbecile both mentally and morally. The little girl seems mentally normal but morally imbecile. But in the man's case the moral imbecility led to the commission of a crime which startles society, compels the law to take cognizance of the question of moral responsibility, and it is for that reason that

Digitized by Google

I introduce the case. The girl is as yet simply an interesting problem in psychology. The paranoiac is for many years and in many instances during his whole life, simply a problem in psychology and a burden of perplexity to his friends and relatives, but in both the girl and the paranoiac there are possibilities which may at any moment become problems for the courts, problems which are of great moment to society.

The question of moral defect in a person mentally capable otherwise, will not down, it cannot be ignored. We, as medical men, are doubly interested in the growth of a general public knowledge of the facts. We are interested because only through our profession can the general public become properly informed. Only as the public is so informed can there arise a just attitude of the public toward these defective members of society.

We are personally interested also from the fact that when one of these defectives becomes an offender against the social order we, as medical men, are the only ones who can stand between the indignant people and the irresponsible offender. In so doing we bring down upon ourselves a public condemnation. It is often claimed that we are knowingly trying to shield the guilty. With an enlightened public opinion this unjust aspersion will disappear.

Society must be protected from defectives of all sorts who are dangerous but men at heart are essentially just—no one today wishes to punish an insane patient. We simply protect ourselves from them. We need to be protected from the defectives of the sort we are today considering, but it is fair and just that society should appreciate that, in these cases as in the other insane, punishment is unjust. Even more. The general appreciation of such facts as I have herein outlined will really enable society to protect itself much better than it now does. As it is now, a paranoiac or moral imbecile is simply looked upon as a crank, avoided as much as possible as a bore or a nuisance. The dangers which we medical men know to exist in these cases the public knows nothing of. Not until some crime is committed do the people appreciate the situation, and they then draw wrong conclusions. Were the

Digitized by Google

public, the legal, definition of unsoundness of mind to be the same as that of the alienist, the public would regard paranoiacs and moral imbeciles as proper subjects for judicious supervision. That such public sentiment is of slow growth is certain, but we, as medical men, ought to do our necessary part in forming a just opinion based upon our professional knowledge of the facts.

I have presented this subject in a very brief and incomplete manner, but I have done so before this body because you, gentlemen, must form public opinion upon this matter if it is done at all.

Digitized by Google

DISCUSSION.

DR. BELKNAP, Niles: This is a question in which I am intensely interested, and in order to bring out a point that interests me most I would like to relate an instance which happened under my own observation. Some ten years ago a man came to the city of Niles and was employed by an old bachelor and his maiden sister on an adjoining farm. After working there a short time he stole some money belonging to the owner of the farm, was caught and sent to the State prison. Upon his release he returned. The man himself having died in the meantime, he was cordially received by the maiden sister who still resided in the house. He stayed there some little time, didn't work very much, worked a little, and then suddenly disappeared, taking with him a pony belonging to a liveryman in the city. He was caught after a few days and was again sent to the State prison. Upon returning a third time he was seen by some of the inhabitants around the city but no particular notice was taken of him. In the edge of the evening, about seven o'clock, it being at the season of the year quite dark at that time, screams were heard issuing from the house of this lady, and the people who heard them, hastening to the house found a prop up against the door, which was in the basement, and upon pushing the door open found pools of blood on the floor, and going from there into the room found the woman with her throat cut and showing evidences of having been badly treated with the butt of a revolver, and evidences of the shots which they had heard at the same time they heard the screams. The man was probably in the house at that time. The men who went there, however, being unarmed and suspecting it, being rather afraid of him, went out of the house and the man disappeared. He was caught later, however, and sent to State prison

Digitized by Google

again where he now is serving a life sentence. This man was very effeminate in his appearance, was very gentle and mild mannered in his talk, a man who would readily win the affection and confidence of any person. And yet here were three successive crimes, the latter one of the foulest murders ever committed in our section, one of the worst murders I have ever read of—committed against persons who were his friends, who strove to be his friends. This case and one or two others which I might relate have made me intensely interested in the subject that Dr. Inglis has been treating, and it seems to me that the time has come when the medical profession ought to advocate a scientific examination of criminals. It seems to me that in some manner this mental or moral obliquity ought to be recognized by law. At the present time, as Dr. Inglis states, the law is holding the medical profession in ridicule, because we apparently do not agree on these subjects. I am not a stickler as to methods—I don't know as I could say how the State ought to undertake this subject—but it would occur to me that at least some one ought to be employed in connection with our State prisons to examine into these cases, and when a case of this sort occurs he ought not to be turned loose on an unsuspecting public.

Dr. Hitchcock, Detroit: I appreciate the importance and the interest attaching to the subject, and I regret that I feel myself unable to add very much of value. I wish to say this, however, that I should have been much interested to have heard the legal arguments by which the legal gentleman backed himself in his position concerning this case. It seems to me that the legal position must be a lame one when considered in the light of the points which Dr. Inglis has successively mentioned in his paper. I see no reason whatever why we should not expect to find mental defects along this line as along other lines. I see no reason why moral obliquity should be looked at so askance by the legal men nor why they should not appreciate the importance of recognizing this form of insanity, and that such a form of insanity may just as well occur as any other mental defect. I have been somewhat interested in the case to which the doctor refers, as

Digitized by Google

I have intimate relations with Dr. Emerson, who also examined the case with the doctor, and I have had several talks with Er. Emerson concerning the case and it certainly was a very interesting case.

I recall in my short asylum experience of some years ago some cases of similar insanity. I recall one case where Dr. Hurd was very much puzzled as to the evidence of insanity and as to what evidence he had for the holding of the patient who came to the Eastern Michigan Asylum, as many patients do, with a very meagre history and with very meagre evidence as to her insanity. The woman did not appear to be of large mental calibre and yet normal for the class she represented, to all appearances. She happened to be in one of the halls of which I had charge, and Dr. Hurd said to me, "I fail to see any special evidences of insanity about Mrs. ——, and I wish, Dr. Hitchcock, in your rounds you would be particular and give careful consideration to that case, get her into conversation and find out what you can about her." I did so and I had a number of conversations with the woman before very much was elicited. Finally, however, she talked to me a little more freely, and it was marvelous the freedom with which she discussed her illicit relations with this man and that man, and with the utmost absence of any shame or appreciation that it was in contravention of any moral laws or obligations whatever. The woman seemed utterly lost on the moral side. And it was relations growing out of that very defect that had led to her admission to the asylum.

If the necessary components of mental integrity be logically considered, viz: Normal sensation, preception, memory, ideation, reasoning and judgment, we shall be able, in this, and in other forms of insanity to find the mental defect in the utter inability to appreciate the normal relations of things on the moral side.

We are certainly under obligations to Dr. Inglis for the able and instructive paper.

Dr. E. L. Shurly, Detroit: I have been very much interested in the paper and I am very glad that Dr. Inglis has brought this matter before us. The subject certainly is a

Digitized by Google

very practical one. I do not see, however, how the law can be changed very much, to take cognizance of the results of this mental condition. It seems to me that our moral nature is a complex thing. I don't see how we can argue upon it from the special senses as a basis. Color blindness is an abbreviation of a special sense; so is an osmia a perturbation of the sense of smell. If from a defect of this or that sense there comes also a defect of will power in certain directions, so that the moral code or the law is broken, then I might see a legal connection. It seems to me that in all the cases related, the basic difficulty is in the will. Now there has been no test made with these individuals to ascertain whether they know what is right and wrong, from the simple standpoint of a practitioner. People do wrong in three ways: One is through impulse, another is through deliberate exercise of will power and another through accidental causes. The impulse, of course, may be connected with the two last motives, or the impulse may be accidentally excited. And we have another method of doing wrong, which is deliberate. We meet with many people who will continue to do wrong—intelligent people who will continue to do wrong, and if you talk with them and say, "why do you do that?" they will say the impulse seized them to do it, They know it is wrong all the time and they acknowledge the wrongdoing, so that you cannot conclude that they cannot help it; you can only say that they have indulged a psychic habit. If, for instance, a person gets the habit of going around a post on its right side, it is but a little while before the habit becomes automatic and fixed; it may affect the brain or it may affect the spinal cord. I sometimes think that those people who are doing little wrongs all the time and are called heedless or careless, probably get the habit of doing so without fully appreciating the consequence of it, and while I believe with Dr. Inglis in a moral imbecility, I believe it is a moral insanity. I believe that all these cases are related and are practically cases that could be included in the broad term of insanity, because I cannot conceive of such a condition of mind excepting in insanity. An all round imbecile is not capable of being taught

Digitized by Google

that this thing is right or the other thing is right, but an obtundity in a person recognizing right and wrong, it seems to me, shows a defect of the will. If a person puts a finger on a hot stove and it is burned, he doesn't do it again because of the experience that it hurts. Now those of us who are sensitive have not the impulse to do wrong because it hurts our senses, our psychic senses. The individuals who have been brought forward as examples have not, perhaps, this psychic sense so strongly, and therefore they get in the habit of doing wrong or they continue to do wrong at least from a defect of the will, it seems to me, rather than from a defect of the perception, and such persons are particularly insane and should be treated as insane, and sequestrated. Now the illustrations used of lying, stealing and so on, are simply natural instincts; we all have them naturally; we have simply gotten rid of them or repressed them because we have been educated to do so. They are educated out of us through fear or discipline. It is perfectly natural for human beings, especially children, to lie and steal, to use force and to indulge in anger and so on. I have been very much interested in years past in noticing the same instincts in the anthropoids, especially the higher monkeys, apes. They show human cunning; they will lie and deceive one another right along. Of course they don't talk and don't lie that way, but they will deceive in every other way. They will threaten each other; they are bulldozers; they make all sorts of motions, menaces and before fighting they show anger, and certain monkeys will have their anger aroused by things that other monkeys may not notice. They display all of these human traits. They also have the human trait of mercy to a limited extent. All aborigines have also this trait of mercy to a greater or less degree. They will fight, but they do not fight to kill by choice; they do fight and kill but they don't fight to kill from choice. There are certain circumstances that will excite their compassion. Monkeys may fight terribly, but when one is fairly subdued, fairly whipped, the vanquisher will not go on and kill like the miserable animal called the bull terrier,

Digitized by Google

which fights and is not satisfied until he kills. I regard the bull terrier, next to the snake, the lowest of all animals.

This is a large question and one which I do not feel competent to discuss at length. I only make these remarks from the standpoint of a practicing physician and from observations which I have made upon ordinary cases, instances which have come under observation in the course of ordinary practice. A striking case is that of a friend who has a boy who has caused him a great deal of trouble in the way indicated by Dr. Inglis. The boy probably has the will power necessary but has also a "won't" power which is a great deal stronger, and that is all there is of it.

DR. FERGUSON, Kalamazoo: I don't know whether it is out of order, not being a member of this association, for me to say anything, but I was pleased with Dr. Inglis' paper. He mentioned the fact of face blindness. I could not help realizing how prominently that feature existed in my own nature, in regard to Dr. Inglis. Twenty-eight years ago the 28th day of next month, if I mistake not, Dr. Inglis and I said "good-bye" to each other. I had not seen him since until today and the face blindness made itself prominent in that respect.

DR. INGLIS: Did you know mine?

DR. FERGUSON: No, the Chairman calling you by name is what helped me out. In regard to moral insanity, it seems as though we would have to acknowledge that the individual must have a consciousness of the gravity of the action that he does, because a moral thing, in its general sense, as I understand it, means a thing done rightly, and immorally in the general sense of the term means a thing done wrongly, and if that person doing the act has no consciousness, has no conception of the gravity of that act, as to whether it is wrong or right, it seems to me that it would be a hard question to place the act in the light of the moral code. But be that as it may it brought up that feature, and developed another feature that makes itself prominent to all of us, and that is this, that a man is a social being, and this question of insanity, moral insanity, man's morality and manhood is purely in my mind a social question. He is a social being, a social animal. There

Digitized by Google

is one thing in connection with this moral question and this insanity question that I feel interested in and that is this, that we brother physicians should do our utmost to try and im press the rural people, the country people throughout the country with the advisability of taking care of their relatives at the earliest opportunity. Talk it to them, publish it in the county papers, write themes upon the question and have those themes published in the county papers and make the matter a matter of importance to the relatives and friends of these unfortunate beings.

DR. INGLIS: There is very little necessary to say in closing. I want to straighten matters up a little bit, however, with Dr. Shurley, in this way: Dr. Shurley inclines to think that the difficulty with these patients is a defect of will, and gave as an illustration that a child having put his finger on a hot stove used its will to keep his fingers off from the stove, which is unquestionably true, but the thing that is back of the will is the remembrance of the fact that the stove was hot. If the child did not remember the hot sensation the child would not use its will. The fundamental thing is that the patient shall have a proper memory for sensations of one sort and another, for when we come to analyze the whole thing, all our mental processes are carried on by remembering things; we remember sensations of all kinds and then the rest of the process is very largely a process of remembering the relations between those things. Now if a person forgets the sensation or if it so be that a patient forgets or is unable to appreciate the relations of one thing to another, then the whole mental process is defective. It is not a question of will, it is a question of relation. The trouble with these defectives is that they are entirely incapable of keeping in mind the relations of things. We use very commonly the phrase that a man is a born liar, and we think that is merely an amusing phrase. It is a beautifully descriptive one. I attended the wedding of a young lady in whom I was deeply interested and she married a young man who was a charming fellow; he had a most delightful manner and was a good business man. We liked the wedding and quite congratulated our young friend in having made such

Digitized by Google

a delightful match. He was courtesy itself. She lived with him a little while and then separated from him. I questioned her some years after the separation and asked her a little bit about the life she lived with him. She said, "I had not been married to Harry but a day or two or a few days before I realized that I had married a born liar. For instance, he would come home and say, "Mary, I met so and so today, and they have invited us to come around to a little dinner party this evening," and so Mary would put on her best bib and tucker and Harry would come home from his place of business and put on his best clothes and then very courteously he would give his bride his arm and they would walk up to this dinner party, only to find when they reached the place that there was no dinner party and that he had not seen the man who was his expected host and had not been invited to come to any dinner party. In other words, he lied. He would lie for absolutely no purpose, and what is more, he walked cheerfully and pleasantly with his wife to a demonstration of the fact that he lied, and when he got there, while his poor little bride was overwhelmed with chagrin, he was as calm as a summer morn and had no apology to offer either to his host or hostess or his wife, while he walked cheerfully away and she walked mournfully away. It was not a question of will on his part.

DR. SHURLY: It was his will that got him into trouble.

DR. INGLIS: It was inability to comprehend the difference; the thing that got him into trouble was his lack of appreciation of the normal relation of things. That is merely one illustration. He was a born, habitual, inevitable, preverse liar. The fact was he couldn't do anything else.

All of these cases are simply illustrations of an inherent defect, and I make my plea that medical men shall recognize the fact that that defect is a defect; that it is in many individuals something that no amount of training, no amount of control, no amount of effort, can, by any possibility, change. It is not to be corrected any more than color blindness or any other defect of that sort.

DR. HITCHCOCK: I would like to ask the doctor in that connection if he believes there are certain individuals who

Digitized by Google

have all these baser instincts and cannot be educated out of it? That is what you mean? Here is a given man. Assuming that we all should lie naturally and should steal naturally, that there are certain ones who cannot be educated into moral channels which lead them to leave that instinct, to suppress it—cannot be educated out of it?

DR. INGLIS: I am not a very good Presbyterian and I always quarrelled with the idea of original sin, still, I recognize that I am somewhat of a liar myself.

DR. SHURLY: That is what I wanted you to acknowledge.

DR. INGLIS: But the distinction which I particularly wish to draw is this: Such lying as I do or did, I conceive always to have a purpose; it is a means of attaining something, that has, after all, behind it a reasonableness. The difference between me and the gentleman I mentioned just now, the born liar, is that he lies to no purpose. But I don't lie very much.

DR. SHURLY: To a purpose.

DR. INGLIS: For any purpose, not very much, and I do not for this good and sufficient reason. I may have all kinds of impulses to do it, but practically I do not do it very much. Why? Simply because I am amenable to the influences which train that thing out of us

Now I do not want to make a plea for a medical lenience for men who commit crimes of any sort when they have within them the appreciation of the nature of the crime. They can be trained out of it, and the experience of Mr. Brockway down at the Elmira Reformatorry is a very strong illustration of that. You can train a man if he has the elementary response to the training influences. I do not lie, because there are a great many influences that can be brought to bear upon me that make me understand that lying is wrong, and, furthermore that it is unwise. But this young man that I told of, all of these restraining impulses were absolutely useless; they never touched him.

DR. BELL, Detroit: Are we to understand that environment or training will remove all these moral diseases that you have depicted?

Digitized by Google

DR. INGLIS: Why, I started out in the paper with the primary statement that the average person had within him all kinds of capabilities. I might have added that he is capable of responding to a great variety of inhibitory influences and that in the education of our children we habitually use those influences. Those things we call environment, and the average person responds to environment, and the people I have in mind are the very people who cannot respond to environment, because they have not that within them which will answer to it.

When I told the story of the little girl, I told how on one occasion only did she grieve because she had been marked for breaking the rules. The matron felt joyed at the fact that that child cried that once, for the matron said, "Now I have found out some way to reach that child, there is a moral sense in that child," and to the extent that she showed on that one occasion a feeling of grief at her own wrong doing, she did have a moral sense, but unfortunately she never showed any second illustration of the existence of that moral sense. The average person of course is full of responses to the environment.

A MEMBER: I would like to ask Dr. Inglis the question, if he attributes this to lack of development or a hereditary lack?

DR. INGLIS: That brings up a very large question on which we must not wander widely. I think, generally speaking, it is a thing that is congenital. I used particularly the word "Imbecility," for I wanted to convey the idea that the thing essentially was a congenital defect. But I think we may as well recognize this, that if mental defects be congenital, the prolonged use of morphine or intoxicant drugs or whatever sort seems to be capable of ultimately bringing about a condition which closely resembles that which in most of these cases I think is congenital. The born liar that I spoke of was a born liar, and it is a notorious fact that the habitual user of morphine is also an habitual and useless and perverse liar. That person is not a born liar, that person is a developed liar.

Digitized by Google

A BRIEF ACCOUNT OF THE MINUTE ANATOMY OF THE SYMPATHETIC NERVOUS SYSTEM AND ITS RELATION TO THE CEREBRO-SPINAL NERVOUS SYSTEM.

G. CARL HUBER, M. D.,
Ann Arbor.

Our knowledge of the structure of the central and peripheral nervous system has been most notably advanced in the past few years, so that theoretical conclusions have largely given place to deductions drawn from observed facts, facts which would not seem controvertible. Our more recent conception of the finer anatomy of the nervous system, owe their existence largely to the introduction of new methods of microscopic technique, by means of which we are enabled to stain differentially nerve cells, nerve-fibres and their endings in a manner which was not possible before these methods were known to us. And it is not surprising that so many workers in all lands should have turned their attention to the unraveling of its intricate structure, already giving us a literature which numbers many hundreds of papers.

One of the chief results of all this work has been the establishment of the fact that the entire nervous system—central as well as peripheral—is made up of separate and distinct anatomic units, units which are no doubt as distinct and separate as are the cells of epithelium, of gland or of muscle or of any of the tissues of the body. To the anatomic units of the nervous system the term *neuron* has been ascribed. A neuron, therefore, consists of a cell body and nucleus and one or several processes. These processes are of two kinds. The es-

Digitized by Google

sential one, the neuraxis, becomes the axis-cylinder of a nerve fiber, may attain great length and often undergoes repeated branching, and gives off side or collateral branches, all branches terminating in an end-brush which varies in its complexity. The other kind of branches—the dendrites—may be wanting entirely, or present in numbers varying from one to twenty. The dendrites usually break up into branches which terminate near the cell body of the neuron, or, they may become the axis-cylinders of a nerve fiber as is the case for the neurons of the posterior root and other sensory ganglia. Yet, while we are to regard the neuron as an anatomic unit, it must be borne in mind that no neuron is ever completely separated from other neurons. Each neuron is always in close contact with some part of one or several other neurons. This is accomplished in one of two ways—either by the neuraxis of one neuron touching the dendrites of one or several other neurons, or by the neuraxis of one neuron entwining the cell-body of another neuron. In this way neuron chains are formed, along which impulses pass from the periphery to the central nervous system, from one portion of the cerebro-spinal axis to another and from the centers to the periphery. The entire nervous system may, therefore, be said to consist of neuron-chains, and the tracing of them is a problem which perhaps more than any other engages the attention of the scientific neurologist at the present time. For it is only when the respective positions of the several neurons in such a chain become established that the results of many investigations become of practical value. It is my purpose in the few remarks which I propose to make to-day, to give by way of summary some of the results obtained by others and myself in investigations of the sympathetic nervous system by means of modern methods, both physiological and hystological and to show that this portion of the nervous system, which until quite recently has been so little understood, conforms in its structure to that of the cerebro-spinal nervous system, with which it is very intimately connected.

In speaking of the sympathetic nervous system we have in mind a series of ganglia, united by nerves, found on either

Digitized by Google

side of the vertebral column and extending from its sephalic to its caudal end. These constitute the great gangliated cords or chains, which are, for purposes of description divided into a cervical, dorsal, lumbar and sacral portion, the number of ganglia in each division corresponding in the main to the number of vertebrae found in each of the above named regions with the exception of the cervical, where only three ganglia are found. There are further a number of so-called cranial ganglia, namely, the sphena-palatine, otic, ciliary, sublingual and submaxillary, all of which are paired, and three unpaired ganglia or aggregations of ganglia, of which the cardiac is found in the thorax, the semilunar in abdomen and the hopogastric in the pelvis. The sympathetic system comprises, further, myriads of smaller ganglia, so-called peripheral ganglia, found in the coats of the intestine in the trachea and bronchi, in the bladder and in or near all the larger glands of the body, the majority of these are too small to be seen with the naked eye, but may be readily seen under the microscope. From all these ganglia, numerous nerve-trunks, large and small, and composed of so-called sympathetic nerve-fibres, have their origin. These and their branches are woven into plexuses, at the nodal points of which the peripheral ganglia are found. The sympathetic nervous system is united to the cord and brain by means of the so-called rami communicantes of which there are described a white and a grey variety.

Most of the text books portray very clearly the richness of the sympathetic nerve supply of the viscera, glands and vessels, and give us artistic reproductions of carefully and no doubt most accurately executed dissections, giving in detail the various branches of the ganglia described, and showing their abundant division and their varied anatomosis. Useful as this work has been, we are forced to admit that it is only in comparatively recent time that any actual progress has been made in the solution of this intricate problem. Here also modern methods, both physiologic and histologic, have broadened our knowledge; and it shall be my endeavor to show that in the sympathetic system as in other parts of the nervous system, separate and distinct neurons exist, and that

Digitized by Google

these are united into neuron chains. In such chains the peripheral link is always a sympathetic neuron, the cell body of which is situated in one of the many sympathetic ganglia; the second link in the chain, the more central one, is always a neuron, the cell body of which is found in the spinal cord or brain and the neuraxis of which comes in contact with one or several sympathetic cells.

The subject matter to be presented I shall arrange as follows:

1. The shape and structure of sympathetic neurons and the mode of the termination of their neuraxes.

2. The probable course and termination of the cerebrospinal fibres which end in the spmpathetic ganglia, namely, the fibres which constitute the white rami.

3. The origin, course and distribution of the fibers constituting the grey rami.

SHAPE AND STRUCTURE OF THE SYMPATHETIC NEURON.—Consequent upon results obtained by the Golgi and methylen-blue methods, we now possess very definite information concerning the shape and structure of the cells found in the sympathetic ganglia. Ten years ago Koelliker* drew attention to the fact that these nerve cells might be stained by the Golgi method and showed that in all mammalia these cells were multipolar. These observations were soon confirmed by Cagal, Van Gehuchten, Retzius, Sala Lenhossck and others, all using the Golgi method in their several researches, and by Dogiel and myself in observations made with the methylen-blue method. And it would seem clearly established that of the branches of these multipolar cells one is the neuraxis the other being dendrites. The cell bodies of these sympathetic neurons are clustered in larger and smaller groups, forming the sympathetic ganglia. These ganglia are invested with a connective tissue sheath, the so-called capsule of the ganglia which is continuous with the perineurial sheath of the nerves entering and leaving the ganglia. In structure, the majority

*I do not deem it necessary to give references to the papers of writers quoted in this brief summary. This I have done very fully in two previous publications on this subject: Four lectures on the sympathetic nervous system. The Journal of Comparative Neurology, vol. vii, 1897. The minute anatomy of the sympathetic system of vertebrate. Journal of Morphology, vol. xvi.

Digitized by Google

of the sympathetic neurons resemble that of the motor cells found in the spinal cord and medulla. The cell bodies of sympathetic neurons have each a nucleus and nucleolus and the protoplasm contains the chromophile granules and an intergranular, less stainable substance. The number of the dendrites of the sympathetic neurons varies. The majority of them have from six to fifteen or twenty dendrites. These usually break up near the cell into secondary branches, which form an intricate plexus under the capsule of the respective ganglion and an intricate network between and around the cell bodies of the sympathetic neurons of the ganglion. This intercellular network is always external to the thin nucleated capsule which surrounds the cell body of each sympathetic neuron. Some of the neuraxes of sympathetic neurons are surrounded by a thin medullary sheath to near their termination, others possess a medullary sheath for only a short distance, the great majority of them are, however, nonmedulated throughout their whole length. They branch frequently, the branches often diverging and this branching aids greatly in the formation of the plexuses so characteristic for the sympathetic system. It must be remembered, however, that while there is this formation of plexuses, there is no avastomosis of the neuraxes of sympathetic neurons, nor of any of their branches. These retain their identity to their termination. This needs to be emphasized as one frequently meets with illustrations, showing anastomosis of the sympathetic nerve fibres. This would be contrary to our more modern conception of the structure of the nervous system. The neuraxes of sympathetic neurons terminate in one or the other of the following ways:

1. In Involuntary Muscle Tissue. I think it is now fully established, that all involuntary or nonstriated muscle tissue receives its nerve supply from sympathetic nerve cells. A large number of the sympathetic nerve cells are therefore motor neurons. The neuraxes of such motor, sympathetic neurons form plexuses around the bundles of the nonstriated muscle cells, from which plexuses fine terminal branches are given off, which course along between the involuntary muscle

Digitized by Google

cells, giving off short lateral twigs which end in small nodules on the muscle cells. All involuntary muscle tissue, that of the intestinal canal, the urogenital organs, all blood and lymph vessels, etc., receives its nerve supply from the sympathetic system.

2. HEART-MUSCLE TISSUE. The general arrangement of sympathetic nerves in the heart is essentially the same as that described for involuntary muscle tissue, the ultimate ending is, however, somewhat more complicated. Heart muscle receives all its direct nerve-supply from the sympathetic system.

3. GLAND TISSUE. The secretory nerve-fibres going to glands are of sympathetic origin. The cell-bodies of the sympathetic neurons, the neuraxes of which innervate the glands, are sometimes situated near the gland, as for instance in the salivary glands, or some distance from them, as is the case for the sweat glands. The neuraxes form plexuses around the gland ducts, the terminal branches ending on the gland cells, and not in the gland cells as has been taught.

The great majority of the neuraxes of sympathetic neurons terminate in one of the three ways above mentioned. Some few, however, as Dogiel has shown and whose work I am able to corroborate in this respect, terminate on the dendrites of other sympathetic cells, and others would seem to end in the sensory ganglia; as to the function of these, nothing definite can as yet be stated.

THE ORIGIN, COURSE AND TERMINATION OF THE WHITE RAMI FIBRES. It is now very generally accepted (first shown by Budge and Waller) that all effects which can be produced by stimulating the sympathetic nerves in any region, can be produced by stimulating certain spinal nerves in the vertebral canal, or by stimulating the cord itself in certain regions. It is well known that the sympathetic ganglia of the chain are united to the cord by means of white and grey rami. The efferent impulses excited on stimulating the cord or the spinal nerves within the vertebral canal must reach the sympathetic ganglion through these rami. The very painstaking and accurate researches of Gaskell and Langley have shown that the anterior roots of the spinal nerves from the first thoracic

Digitized by Google

to the third lumbar contain small medullated nerve fibres, varying in size from 1.8 u to 2.7 u, and that in serial sections these small medullated nerve fibres may be traced to the sympathetic ganglia through the white rami. All the spinal nerves have grey rami and these contain largely nonmedullated fibres. Since no nonmedullated nerve fibres leave the spinal cord through either the anterior or posterior roots (Gaskell) and since "the first thoracic spinal nerve, the uppermost nerve which has a white ramus, is the uppermost nerve which on stimulation produces sympathetic effect" (Langley), it follows that a stimulus applied to a spinal nerve in the vertebral canal or to the cord itself, producing sympathetic effect, excites an impulse which travels along nerve fibres contained in the anterior roots and thence passes through the white rami to the sympathetic ganglia. A further step in the solution of this problem was reached when it was shown that these white rami fibres terminate in the sympathetic ganglia. Conclusive evidence for the substantiation of this statement we have both from the physiological and histological side. For the physiological evidence we are indebted to Langley and his coworkers. The work to which I wish especially to refer at this point is the following :

Langley, Anderson, Dickinson and Sherrington have shown that by injecting a solution of nicotine into the circulation of an animal, for some time after the injection the sympathetic effects which are produced by stimulating the anterior roots of spinal nerves containing white rami fibers, or by stimulating the white rami themselves in normal animals, cannot be obtained. The same is true if a solution of nicotine is painted over the sympathetic ganglia. As nicotine has no action on the white rami nerve fibres in their course before they reach their termination, it follows that this drug paralyzes either the ending of these fibres or the cell bodies of the sympathetic neurons of the ganglia, and it is now quite generally agreed that the ending of the white rami fibres are paralyzed.

We see, therefore, that an impulse set up in a nerve cell and coming from the spinal cord through a nerve fibre in one of the anterior roots and through one of the white rami passes

Digitized by Google

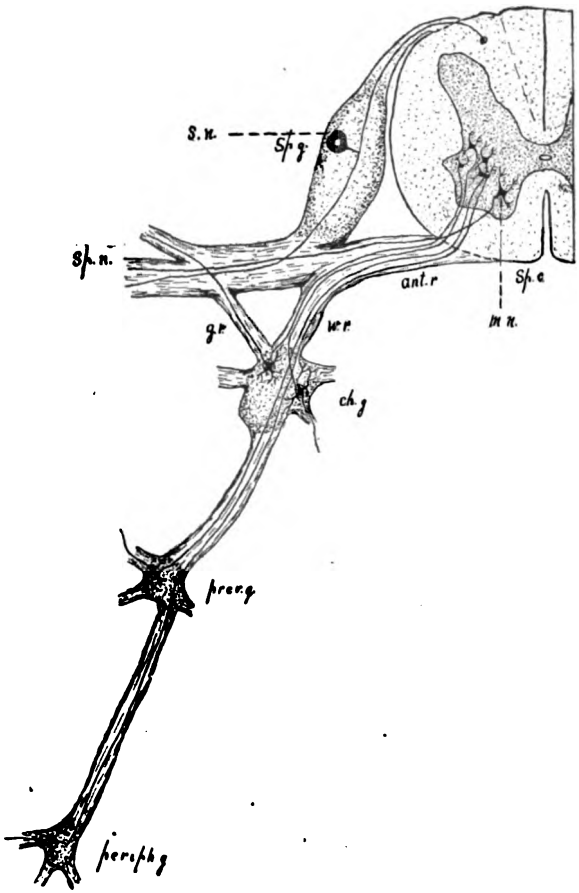
through a sympathetic nerve cell before reaching its destination. It has been shown by abundant observations recorded by Ehrlich, Retzius, Smirnow, Armstein, Aronson, Van Gehuchten, Lenhossek, Koelliker, Sala, Dogiel and myself that entering the sympathetic ganglia there are found small medullated nerve fibres, which after branching terminate in end-brushes which entwine the cell-bodies of the sympathetic nerons. These endings, pericellular end-baskets as they are called, are found within the capsules which surround the cell-bodies of the sympathetic neurons. These pericellular end-baskets are found in all vertebrates which have been studied with reference to this point and in all sympathetic ganglia which have come under the eye of the observer. That the small medullated fibres which thus terminate in the sympathetic ganglia, are the white rami fibres above referred to there can be no question from the evidence at hand. We are prepared, it seems to me, to formulate the following conclusion: The sympathetic neurons, the cell bodies and dendrites of which are grouped to form the sympathetic ganglia, form the terminal link in a neuron chain, of which the second link is formed by neurons, the cell bodies of which are situated in the cerebrospinal axis, the neuraxes of which leave the cord or medulla through the anterior or motor roots as small medullated nerve fibres, which fibres end in intra-capsular, peri-cellular baskets, enclosing the cell bodies of the terminal—the sympathetic—neurons. An impulse coming from the cord or medulla along one of the white rami fibres is transferred to the cell body of a sympathetic neuron and thence along its neuraxis to some peripheral tissue. In tracing these nerve chains—white rami fibres and sympathetic neurons—the nicotine method has been most useful. From what was above stated concerning this method it will be seen that by stimulating nerve-fibres running to a sympathetic ganglion, and those running from the ganglion before and after the application of nicotin, the nerve fibres which end in the ganglion may be distinguished from those which pass through the ganglion without making connection with its nerve cells. For instance it is known that

Digitized by Google

by stimulating the anterior roots of the first, second and third thoracic nerves, among other sympathetic effects a dilatation of the pupil will be observed. The impulses in this instance travelling along the white rami to the stellate ganglion, thence along the Ansa Vienssenii to the inferior cervical, along the cervical sympathetic to the superior cervical and from thence along the sympathetic fiber to the iris. The painting of a solution of nicotin over the stellate and inferior cervical ganglia does not interrupt this impulse, while no effect is obtained after painting this solution over the superior cervical ganglion. It follows thus, that the white rami fibres, which on stimulation cause dilation of the pupil pass through the stellate and inferior cervical ganglion, along the cervical sympathetic and end in the superior cervical ganglion, in which the impulse is transferred to the cell bodies of sympathetic neurons and along their neuraxes to the eye. Many such chains have already been worked out, and in the further advance in our knowledge of the structure of the sympathetic system, such physiological work will be of the greatest value. And I trust that enough has been said to make it clear that not by the most careful dissection can the intricate plexuses of the sympathetic system be unravelled, but rather by this more simple and much more accurate physiological method.

THE GREY RAMI COMMUNIANTES. As previously stated, all the spinal nerves and some of the cranial nerves have grey rami. Strictly they consist largely of nonmedullated nerves. It will not be necessary for me to give a detailed account of the development of our knowledge concerning these structures. I shall simply state that it seems conclusively shown (Gaskell, Langley and Sherrington) that they are the neuraxes of sympathetic neurons which run back to the spinal nerves and follow in a general way their distribution, supplying the glands of the skin, the muscles of the hair and are the vaso motor fibres of the skin and muscles. They have no sympathetic ganglia in their course as the injection of nicotin does not paralyze their action. The accompanying figure may serve to illustrate the statements made in these pages.

Digitized by Google



In this figure is represented a portion of the spinal cord, sp. c.; an anterior root, ant. r.; a spinal ganglion, sp. g.; a white ramus, w. r.; a grey ramus, g. r.; a chain ganglion, ch. g.; a prevertebral ganglion, prev. g.; a peripheral ganglion, periph. g.; and a portion of the spinal nerve of this segment, sp. n. In this diagram there is further represented one motor neuron, m. n.; and one sensory neuron, s. n. Four white rami leave the cord through the anterior root. Of these two terminate in a chain ganglion, which they reach through the white ramus; the other two white rami fibres terminate

Digitized by Google

respectively in the prevertebral and peripheral ganglion. In each case the white rami fibers end in a peripheral end-basket which encloses the cell body of the sympathetic neurons, sketched in the several sympathetic ganglia represented. It will be observed that the grey ramus contains the neuraxis of a sympathetic neuron. I have in this figure tried to represent graphically that the sympathetic neuron is the terminal link of a neuron chain of which the second link is a white ramus fiber. It may thus be seen that the sympathetic neurous system is intimately connected with the cerebro-spinal nervous system, and should be thought of as a part of the entire system, and not as distinct and separate.

Digitized by Google

A SERIES OF ANALYSES, IN ACUTE MELANCHOLIA, OF THE STOMACH CONTENTS AFTER A TEST BREAKFAST.

SAMUEL BELL, M. D.,
Detroit.

In nearly every case of acute melancholia there exist, in a greater or lesser degree, clinical symptoms of stomach derangement. In many cases these symptoms are very pronounced, so much so, that this question often occurs to us—What relationship may the stomach disorder and the associated intestinal abnormalities bear to the etiology of the depressed condition? Sub-acute or chronic intestinal toxæmia is thought to be in many cases a direct causative factor, and abnormalities in the functions of either the stomach or liver, or both, usually precede and are associated with intestinal disorders, hence the importance of looking to the stomach in melancholia.

Dietetics of mental and nervous diseases require careful study and a knowledge of the chemical constituents of the different articles of diet together with their therapeutic indications and physiological application. It has been demonstrated that the actual structural waste going on in the system from mental suffering is greater than in the sane, when performing most severe labor. If the waste is greater than repair there is not proper cerebral nutrition, and brain inanition follows, and the patient succumbs to exhaustion or passes into chronic dementia.

The examination of the stomach contents after a test breakfast is of the very greatest advantage, even in the treat-

Digitized by Google

ment of stomach affections among sane people, but in treating the stomach of the insane, it is even more important because of the difficulty experienced in eliciting from the patients a reliable account of their symptoms. By means of the test examination we have the great advantage of gaining exact objective information from a class of patients, whose subjective symptoms are unreliable and often cannot be depended upon at all because of their disinclination to talk.

METHOD EMPLOYED.

Test breakfast consisted of white bread two ounces, cold water ten ounces. One and one-half hours after breakfast the stomach contents were removed by the expression method of Ewald, using Tiemann's stomach tube, and it was then immediately filtered. Although some difficulty was encountered with some of the patients, yet by firmness and gentleness the process was quickly performed in nearly every case. In only one case of the series was it necessary to use the mouth gag and camisole. The passage of the tube is easily accomplished by having the patient incline slightly forward in a sitting posture, and hold his tongue so that the tip of it will touch the lower row of teeth. It is well to explain to the patient just what it is proposed to do, and thus gain his co-operation, also assuring him that though he may imagine that it will interfere with his breathing, yet he can breathe just as well while passing the tube as at any other time. The expression of the stomach contents is accomplished as follows: When the tube has been passed into the stomach so that the mark on the tube reaches the teeth, ask the patient to take a deep inspiration and then hold his breath and strain at the same time making, with his hands over the abdominal muscles, a firm pressure. In this way the stomach is compressed and the contents are quickly and satisfactorily withdrawn. In this series of examinations the following tests were made in each case:

1. For reaction, with litmus paper.
2. For free hydrochloric acid with congo red test.
3. For free hydrochloric acid by phloroglucin vanillan test.

Digitized by Google

4. For lactic acid with Uffelman's solution.
5. For acetic acid by sense of smell.
6. For pepsin with egg albumen.
7. For propeptones with saturated salt solution and acetic acid.
8. For peptones by making alkaline and adding a few ounces of 1% cupric sulphate solution.
9. For dextrin.
10. For acrodextrin.
11. For erythrodextrin.
12. For sugar (Maltose.)

} With Lugol's solution.

It may not be inappropriate before enumerating the cases, to briefly state what should be found upon examination of a normal stomach one and one-half hours after a test breakfast. According to Einhorn the following should be found: "Acid reaction; free hydrochloric present; lactic acid not present; total acidity varying from 40–50 (equals 0.0150.21 per cent. hydrochloric acid) propeptones present; in small amount or merely in traces; peptones in large proportions; pepsin and rennet present; sugar present; acrodextrin present; erythrodextrin present; in small amounts or absent; dextrin absent."

In our series of cases the following was the result in the respective examinations.

Case No. 1. A. L. Age 24; female. Has suffered from periodical spells of indigestion, which would last from two days to a week on an average. Complexion sallow; skin dry; tongue normal around tip and edges; slight coating at base; feeble appetite; irritable temper, which was exaggerated during above attacks. Assimilation poor. Mental depression aggravated during gastric trouble. No pain in the region of the stomach except during these attacks.

Reaction—Acid: Free hydrochloric acid, absent; lactic acid, absent; but inorganic acids shown. Total degree of acidity 70. Propeptones freely present. Peptones, present.

Case No. 2. W. L. Male, age 35. Neurotic disposition. Suffering from mental depression and hypochondriasis. No organic lesions of brain or nervous system. Diagnosis hystero-

Digitized by Google

melancholia. Tongue covered with a brown coating in posterior region. Edges and front red and clean. Mental activity sluggish. Reflexes exaggerated. Excretions from kidneys and bowels healthy.

Reaction—Strongly acid: Free hydrochloric acid, present; total degree of acidity, 125; degree of free hydrochloric acid, 50; lactic acid, present; maltrose, present; dextrin, absent; erythrodextrin, absent; achroodextrin, absent; pepsin, sufficiently present to digest egg albumen in four hours.

CASE No. 3. T. R. Male, native of Italy, age 36. Acute melancholia, somatic phenomena. Disordered digestion, diminished peristalisis, dry skin, papillae of tongue covered with a dark coating, slow circulation but increased arterial pressure, secretions and excretions both decreased, mental activity very sluggish.

Reaction—Strongly acid. Free hydrochloric acid, present; total degrees of acidity, 160; degree of free hydrochloric acid, 30; lactic acid, absent; inorganic acid, present.

CASE No. 4. Mrs. S., native of Finland; melancholia stuperous; lost interest in everything; suspicious and extremely obstinate; somatic phenomena; constipation; circulation slow; sub-normal temperature; diminished peristalisis; tongue without any coating except over posterior region, but pale and anemic.

Reaction—Strongly acid; acetic acid, freely present; free hydrochloric acid, absent; degree of acidity, 120; lactic acid, absent, but inorganic acids present; propeptones, present; peptones, present; dextrin, absent; erythrodextrin, absent; achroodextrin, absent; sugar, freely present.

CASE No. 5. W. F., male; age 34; melancholia agitata. His chief mental trouble is due to delusions in relation to religion. He has great fear of the punishment of hell. Physically well nourished. He has made several unsuccessful attempts at suicide. Tongue large and flabby, papillae normal except a light brown over the center and posterior part. Offensive odor from breath.

Reaction—Strongly acid; free hydrochloric acid, present; total degree of acidity, 110; lactic acid, absent; inorganic

Digitized by Google

acids shown, propeptones, very freely present; peptones, present; dextrin, absent; erythrodextrin, present; achroodextrin, absent; maltose, present.

CASE No. 6. Mrs. O., native of Sweden; suffering from prolonged mental depression; made two unsuccessful attempts at suicide by cutting her neck; tongue flaccid; edges attenuated and shining red. The circumvallate papillae at the base of the tongue were covered with a brown coating. The fungiform papillae appeared natural.

Reaction—Strongly acid; free hydrochloric acid, absent; total degree of acidity, 100; lactic acid, absent; inorganic acids shown; propeptones, freely present; peptones, present; dextrin, absent; achroodextrin, absent; erythrodextrin, absent; sugar, present.

CASE No. 7. Mrs. L., suffering from puerperal melancholia; tongue did not present an unhealthy appearance; appetite fair; gained in flesh and improved mentally. Nothing in appearance of tongue to indicate any abnormal condition of the gastric condition.

Reaction—Faintly acid; free hydrochloric acid, absent; total degree of acidity, 20; lactic acid, absent; peptones, slightly present; propeptones, absent.

CASE No. 8. N. C., female; age 37; acute melancholia; suffering mental agony from religious delusions; mental activity very much impaired; appetite poor; losing flesh; tongue thin and flabby with slight tremor; protruded with difficulty and surface covered with brown coating over posterior region.

Reaction—Acid; free hydrochloric acid, absent; lactic acid absent; total degrees of acidity, 40; propeptones, absent; peptones, absent; dextrin, absent; achroodextrin, absent; erythrodextrin. present; maltose, present; pepsin, deficient.

CASE No. 9. V. R., male; age 27; native of Finland; profoundly depressed. Had suffered from a fracture of skull over first parietal lobe, having been struck with a windlass; reflexes normal; physically well developed; pupils respond to light; tongue protruded with difficulty and transverse serrations, enlargement of papillæ, also of oblique rugæ over dorsum.

Digitized by Google

Reaction—Acid; free hydrochloric acid, present; total degree of acidity, 110; lactic acid, absent; presence of inorganic acids; propeptones, present; peptones, present; dextrin, absent; achroodextrin, absent; erythrodextrin, present; maltose (sugar), present; pepsin, deficient.

CASE No. 10. L. W., female; age 27; fairly well nourished; phlegmatic temperament; extremely stubborn and contents of stomach removed with great difficulty; had suffered from melancholia for upwards of a year, and during last few months condition had remained stationary and symptoms indicate passing into chronic form.

Reaction—Acid; free hydrochloric acid, present; total degree of acidity, 160; lactic acid, absent; inorganic acids present; propeptones, weakly present; peptones, present; erythrodextrin, present; sugar, present; dextrin, absent; achroodextrin, absent; pepsin, absent.

CASE No. 11. MRS. T., age 37; native of Italy; melancholia acute; losing flesh; appetite poor; peristalisis impaired; tongue normal in appearance; patient did not improve on tonic medication.

Reaction—Strongly acid; free hydrochloric acid, present; lactic acid, none; propeptones, absent; peptones, present; dextrin, absent; achroodextrin, absent; erythrodextrin, absent; sugar, present; pepsin, somewhat deficient.

CASE No. 12. Mrs. K., age 35; native of Sweden; mother of three children, the youngest one month old; suffering from puerperal melancholia with marked suicidal tendencies; physical condition indicates mal-assimilation and that patient is suffering from some form of acute toxæmia; tongue coated heavily and breath very offensive.

Reaction—Acid; lactic acid, present; free hydrochloric acid, present; total degree of acidity, 160; propeptones, present; dextrin, absent; maltose, present.

By a comparison of results in these twelve cases of melancholia that have just been cited, it is interesting and deeply significant to note that in every one of them there is a marked and important departure from the normal. In several cases there was presented a total absence of free hydrochloric acid

Digitized by Google

and in a greater number of cases a great deal too much of it.

In these cases the therapeutic suggestion is plain, viz.: To supply hydrochloric acid and pepsin where it is absent or dificient and in the directly opposite condition of hyperchlorydria, to prescribe an anti-acid treatment using the various agents at our command, such as bi-carbonate of soda, or some of the preparations of magnesia. The problem of the benefit to the patients to be derived from the therapeutic suggestions made in this series of examinations has not yet been properly worked out. However, the results of the medical treatment then established, offered some encouragement even after a very short period of trial.

TREATMENT. In the correct modern treatment of dise ases of the stomach we have recourse to the following therapeutic measures:

(1.) Diet.

(2.) Hygiene and exercise in the open air.

(3.) Medicinal remedies.

(4.) Daily lavage with warm water, using the stomach syphon.

(5.) The direct application of electricity to the stomach.

The daily washing or lavage is one of the most valuable aids in the treatment of the stomach. It is important to do this with a certain precision or routine, as upon that depends a considerable measure of success. The stomach should be washed, preferably in the morning, about one hour or more before breakfast; and one pint of water at a time, at the temperature of the blood, should be poured into the stomach through the tube and then syphoned out again. This should be done four times each morning, that is, four pints should be introduced into the stomach, one pint at a time at each treatment. The last washing will be found to be clear upon withdrawing it, if the washing has been properly carried out.

The physician should notice the character of the water withdrawn from each patient, as it affords information as to the condition of the stomach. For instance, if food is found upon giving the morning washing, it indicates a very bad condition of the stomach, showing that either the muscular walls

Digitized by Google

of the stomach or the pyloric valve, or both, are not properly performing their functions of emptying the stomach of its contents in due time. If mucus is found to be present, it indicates a catarrhal condition of the gastric mucosa. The stomach should be treated with this daily lavage for a period of at least six to eight weeks, and in many cases for a considerably longer time. It will be noticed often that no marked improvement other than temporary relief is preceptible from this treatment until about the second or third week, and then suddenly the condition of the stomach is so improved that the patient shows daily or weekly gains from that time on. Where there is dilatation of the stomach, or atony of the muscles of the stomach walls, the direct application of electricity to the interior of the stomach by means of the deglutt-able stomach electrode is of very marked benefit. This can be done much more easily than might be supposed, but a description of the method is technical and need not be given here. In passing, it might be well to mention the fact that both faradic and galvanic electricity are applied to the stomach with benefit.

Digitized by Google

MICHIGAN STATE MEDICAL SOCIETY.

SECRETARY'S MINUTES

OF THE

THIRTY-FOURTH ANNUAL MEETING HELD AT KALAMAZOO, MAY 4TH AND 5TH, 1899.

FIRST DAY—GENERAL SESSION.

THURSDAY MAY 4th.

The Society met in the Auditorium on Portage street and was called to order by the President, Dr. E. L. Shurly, of Detroit.

Prayer was offered by Rev. Dr. Gray, of Kalamazoo.

The president having introduced the Hon. William G. Howard, Mayor of Kalamazoo, the following welcome was then extended to the Society:

Mr. President and Gentlemen of the Society:

As the Chief Executive of this city for the time being, it affords me genuine pleasure to welcome to our midst so respectable, intelligent and unselfish a body as your association. I am sorry that I am not able to turn over the keys of the city to you this morning, but the fact is I have occupied the office of mayor of this city so short a time that I haven't got possession of the keys myself. But during your stay in this city, gentlemen, so far as you are concerned, we will run the town "wide open" so it will not be necessary to have any key and that part of it will be compensated for.

The city of Kalamazoo this morning has put on its beautiful summer clothing of green, at least two weeks in advance

Digitized by Google

of her ordinary custom, in order to give you gentlemen a respectable and cheerful welcome to the city.

It is certainly refreshing in these days of a mad rush for wealth, when nearly every association that gathers together has for its guiding star selfishness, avarice and greed, in these days when money counts for much and humanity for little and intelligence for still less, except as it is made a means for acquiring wealth, I say it is certainly refreshing to be able to welcome a body of men who meet together not for the purpose of forming any trust or combine but for the purpose of doing good to the human family and to mankind.

There is one thing about the medical profession—and I speak now from the knowledge I derive of it from the local members—there is one thing about it that I always envy and that is the brotherly love and fraternal feeling that exists. In our city here we have what we call the Academy of Medicine, which I suppose is typical of every other city in this state. Perhaps you haven't all had a Dr. Van Deusen who could furnish so beautiful a local home for you as has been furnished here, but here I notice that each month the physicians gather together, not only for a social time, but each gives to the other the benefit of his last month's experience; each is willing to give to the other his knowledge, the benefit of his research and the benefit of his practice, and I apprehend that that obtains all over the state and permeates this state association.

Now, gentlemen, without detaining you longer, the people of Kalamazoo welcome you to our midst and they sincerely hope that your meeting may be a happy and successful one, and a profitable one, not only to you, but to the people of the state, whose health you have in keeping.

The report of the executive committee having been called for, Dr. C. Van Zwaluwenburg, its chairman, responded as follows:

Mr. President: The executive committee begs leave to report that its work is very well told in this little pamphlet. It has been the object of the committee to further the good fellowship of the society. As our mayor has just told you, our

Digitized by Google

Medical Society here is known for its harmony and good fellowship and we wish to foster that in the State Medical Society as well, and if we have failed in entertaining you I assure you it is not because we haven't tried or that we have not wished to. You will find what arrangements have been made by consulting this little program. I would like to call your attention specially to the fact that the Kalamazoo Club has been kind enough to open its doors and will be very much pleased to have you congregate there as much as your valuable and much occupied time will permit. You will find billiard tables and card tables there for those who wish to indulge in those sports, and other things that are interesting.

Then we will be very much disappointed if the gentlemen leave the city without viewing our beautiful rooms at the Library Building, the rooms of the Kalamazoo Academy of Medicine. We are all very proud of our rooms and we hope you will all visit them at any time during your stay that you may find it convenient.

I would like to announce that there will be a reception for the ladies who may attend the meeting, the ladies of the gentlemen who belong to the society, at the Kalamnzoo Club rooms this afternoon. They are asked to meet there at about 2:30 o'clock. At that hour carriages will be in waiting to take them for a drive about our beautiful city. The sun will come out and they will have a very nice opportunity to see the city.

The next order of business being the report of the Secretary, Treasurer, and Publication Committee, Dr. Johnston, the Secretary, presented the following report:

Mr. President and Members of the Michigan State Medical Society:

Your Secretary begs leave to submit the following report:

Financially our society is in a very prosperous condition. The balance in the treasury today being $300.00, larger than was ever before in the history of the society. But numerically the prospect is not so pleasing. Our membership in 1898 was four less than in 1897, and only thirty-five more than in 1891. Numbers are not necessarily an index of prog-

Digitized by Google

ress or efficiency, but they are certainly a pretty good index of the interest felt in this body by the profession of the state. If Wisconsin, with only 1,400 regular physicians, has a state society with 450 members, being one-third of all regular physicians within its jurisdiction, why should Michigan, with over 3,000 regular physicians, have a state society with only 550 members? There is no question but that our membership can be largely increased if proper measures are taken to do it. Your Secretary earnestly hopes that such legislation will be enacted at this meeting as will safely and surely further that end.

The Program Committee held its usual meeting in January. That its deliberations were productive of good results is abundantly testified in the admirable lot of papers upon the program. They are forty-two in number, the same as last year. The small number of papers in the Gynecological section is due to the unfortunate illness of Dr. Metcalf, the secretary of the section, who was taken ill the day of the meeting of the Program Committee, with septic infection of the hand. This confined him to bed for several weeks, after which he went to Florida, and did not regain his health sufficiently to return to Detroit until a couple weeks ago, too late to accomplish anything in arranging a program for his section.

Your Treasurer is a very modest and retiring man, and in his report this morning will no doubt tell you that the society has no liabilities at the present time. In justice to him, however, I wish to state that in the hurry incident to the closing hour of our last meeting, his little honorarium of $100.00 was forgotten. It is yet in the treasury and cannot be taken therefrom without a vote of the society.

We have lost seven members by death during the past year as follows:

L. N. BEAGLE, Flint.
S. T. BEARDSLEE, Armada.
THOS. H. BRIGGS, Battle Creek.
McKENDRA BEST, Grand Rapids.
JOHN B. FARES, Romeo.
D. A. McTAISH, West Bay City.
S. D. O'BRIEN, Kalamazoo.
CYRUS SMITH, Jackson.
HIRAM WALTERS, Eaton Rapids.

Digitized by Google

Two resignations have been sent to the Secretary. Those of

C. C. G. BRUMME, Detroit.
GEORGE C. SCHEMM, Saginaw.

The following removals have come to my notice:

U. A. D. COLELMO, from North Star to Wheeler.
J. M. COLLIER, from Plymouth to Lansing.
H. M. JOY, from Grand Rapids to Calumet.
T. KLINGMAN, from Bay City to Ann Arbor.
J. V. WHITE, from Oscoda to Detroit.

In accordance with article IV, section 3, of the by-laws, I am compelled to report the following members as *two years in arrears for dues:*

Baird, Thos. A., Bay City.
Baird, R. B , Marine City.
Barber, O. P., Saginaw.
Bigg, A. H., Detroit.
Brownell, W. S., Rochester.
Bryan, Alonzo, Detroit.
Bryant, Ruth O., Battle Creek.
Burkhart, J. L., Grand Rapids.
Cowles, A. G., Durand
Cushny, Arthur, Ann Arbor.
Decker, J. W., Lake City.
Dibble, W., Detroit.
Dreker, J. C., Plainwell.
Ferguson, J. E., Belding.
Gardner, E. D., Davison.
Hagadorn, A. F., West Bay City.
Hayden, C. N., Lansing.
Hume, W. C., Corunna.
Lennox, L. J., Detroit.
McCormick, C., Owosso.
McMillan, J. A., Detroit.
Mulheron, J. J., Detroit.
Murdock, T. S., Northville.
Pollard, J, W., St. Johns.
Roberson, G. G., Utica.
Statler, H. O., Berrien Springs.
Tibbitts, M. A., Lindon,
Tinker, F. A., Lapeer.
Voorhees, G. V., Coldwater.
Warren, A. J., Mt. Clemens.
Webber, N. W., Detroit.
Wolfe, F. E., Grayling.
Wood, D. H., Quincy.

The following are in arrears *three years* and will accordingly be dropped from membership:

Arnold, A. L., Owosso.
Bristol, M. C., Bay City.
Clark, C. W., Caro.
Eaton, E., Hudson.
Ellis, E. J. C., Clayton.
Fletcher, E. A., Detroit.
Foote, J. R., Bay City.
Gailey, J. K , Detroit.
Gallagher, M., Bay City.
Gier, F. N., Hillsdale.
Graham, H. W., Mt. Morris.
Hudson, J. H., Merrill.
Kerr, William, Bay City.
Ludlum, S. S , Harrisville.
Miller, Eugene, Battle Creek.
Perkins, Jabez, Owosso.
Pinkham, J. F., Belding.
Shoemaker, J. S., New Lothrop.
Smith, H. E., Detroit.
Sutherland, E. D., Bay City.
Wilson, J. C., Flint.

Digitized by Google

It will be noted that the committee on arrangements together with the Kalamazoo Academy of Medicine, recognizing that our social, as well as our scientific instincts should receive recognition, have made abundant provisions for our entertainment at this meeting. Were there more Kalamazoo Academies of Medicine in the state, the bond of union between this body and the local society in Michigan would be a much closer one than it is at present.

In conclusion, I want to congratulate the society upon the entire harmony of feeling which has existed on every hand during the past year.

In behalf of its officers I wish to thank all who have contributed to the success of the society.

Respectfully submitted,

COLLINS H. JOHNSTON,

Secretary.

Dr. Connors moved that the report of the Secretary be accepted and placed on file; and that the by-laws in so far as they relate to delinquents be suspended in the cases of Dr's. F. K. Owen and H. D. Thomason, who are absent from the country, and that their names be removed from the list of delinquents.

Which motion was supported and carried.

Dr. Hooker, the Treasurer, then presented the following annual report:

Mr. President and Members of the Society:

I am afforded much pleasure in being able to report to the society a better state of finances than existed at the 1898 meeting, and, in fact, better than has existed at any meeting of which I can find record. I desire to avail myself of this opportunity to thank the members of the society for responding to calls for dues, thus enabling me to report the present balance. While we yet have outstanding dues to a considerable amount, I anticipate many members, so in debt to the society, will pay their arrearages at this meeting, and respectfully request that all members will endeavor to pay their dues —arrears and current dues—at this meeting, that the finan-

Digitized by Google

cial welfare of the society may continue and the amount outstanding be reduced to a minimum.

Your Treasurer has received and disbursed funds as follows:

RECEIPTS.

Balance at 1898 meeting		$ 134 07
Dues collected at 1898 meeting		825 00
Dues collected since 1898 meeting		749 10

DIRBURSEMENTS.

Honorarium to Secretary	$ 250 00	
Reporting	106 00	
Miscellaneous printing and stationery	79 50	
Printing Transactions	480 90	
Printing programs for 1899	19 25	
Distributing Transactions	84 17	
Committee expenses	12 65	
Secretary's expenses	49 50	
Treasurer's expenses	3 21	
Secretary Mich. Passenger Ass'n	5 00	
Polk Medical and Surgical Directory	6 00	
Bank exchange	10	
Balance on hand	611 89	
	$ 1,708 17	$ 1,708 17

ASSETS.

Cash on hand	$ 611 89
Outstanding dues	714 00
	$ 1,325 89

LIABILITIES.

None.

There are 67 members in arrears for one year, 35 for two years, and 21 for three years.

Respectfully submitted,

CHARLES E. HOOKER,
Treasurer.

The Publication Committee, through its Chairman, Dr. Collins H. Johnston, presented the following verbal report:

Your committee published last year 550 copies of the Transactions of the society, the same as has been done for the three preceding years. The contract was given to the Sey-

Digitized by Google

mour & Muir Printing Co., the same firm that has done the printing for the past four years, at the same price that it has been done for the past four years.

THE PRESIDENT: If there is no objection, the report will take the usual course.

We will now listen to the first report of the Committee on Admissions, Dr. Eugene Smith, chairman.

Dr. Smith, chairman of the Committee on Admissions, then presented the following report:

S. K. Smith, Port Huron.
O. Stewart, Port Huron.
John C. Brown, Burlington.
Arthur E. West, Eaton Rapids.
Fred C. Thompson. East Tawas.
Emil Amberg, Detroit.
Frank A. Weaver, Charlotte.
F. W. Graham, Ludington.
Robert L. Parkin, Romeo.
A. F. Fischer, South Lake Linden.
Henry W. Whitmore, Quincy.
Thos. C. Irwin, Grand Rapids.
Fred L. Belknap, Niles.
William E. Jewett, Adrian.
G. W. Nihart, Mendon.
Claudius B. Chapin, Pontiac

The above named members are recommended by your Committee on Admissions to be accepted as members of the Michigan State Medical Society after complying with the proper requirements.

EUGENE SMITH,
H. H. SCHABERG.

THE PRESIDENT: If there are no objections the report will be considered adopted, and the gentlemen whose names were read, after complying with the other conditions, will become members of the society.

DR. A. W. ALVORD: I move the adoption of the report of the Committee on Admissions.

Which motion was supported and carried.

THE PRESIDENT: We are now ready for reports of special committees. The first to be heard from is the special committee to petition the legislature with reference to an improved plan of registering births and deaths.

Dr. Connors, Chairman of the committee, reported verbally as follows:

Mr. Chairman and Gentlemen:

A bill prepared by experts in the matter of registration of births and deaths has been introduced in the legislature and

Digitized by Google

is now pending, and so far as the members of your committe know, it is worthy of your support. If you desire it to pass, there is no more effective way of accomplishing it than that each one of you write to every member of the legislature with whom you are acquainted, asking him to pass that bill along and secure its adoption as a way of procuring your favor. A study of that kind of work has fully convinced your committee that in no other way are we so likely to secure a listening ear and an active hand from the legislature, and that will do it, gentlemen. So far as your committee, who are not experts in that matter, are able to judge of the work of those who are, the bill is worthy of support at your hands.

THE PRESIDENT: What is your pleasure, gentlemen, with regard to this report of the special committee?

DR. J. H. REED: I move that the committee be granted further time.

Which motion prevailed.

THE PRESIDENT: The next order of business is the report of the Committee on Legislation, Dr. B. D. Harison, Chairman. Dr. Harison is absent and I will therefore ask Dr. D. Milton Greene, a member of the committee, to read its report.

Dr. Greene then made the following report:

Mr. President and Members of the Michigan State Medical Society.

Your Committee on Legislation beg to report as follows:

In February last your Chairman and Dr. E. S. Sherrill, representing the committee, met in Lansing and held a conference with Dr. D. M. Nottingham, and Dr. Wm. Bell, Chairmen of the Homeopathic and Eclectic State Medical Societies respectively, regarding a medical bill that would not only meet the requirements of the profession at large, but also one that would be acceptable to Regular and non-regular alike.

The several medical bills that had been previously noticed in the House came before this conference for criticism and approval, and the bill framed by your chairman after the League bill of two years ago, and noticed by Hon. Wm.

Digitized by Google

Chandler, of Sault Ste. Marie, was adopted with amendment to the representative section, as more nearly fulfilling the requirements as above. Your committee claimed at the outset of the conference 50%, or at least one-half of the proposed board of registration, which claim was readily acquiesed in by the Homeopathic and Eclectic representatives. A board of registration of eight members was then agreed upon to be made up of four Regulars, two Homeopathics, and two Eclectics; the quorum to consist of not less than six members. It was also agreed upon at this time that each state medical society represented on the proposed board should nominate at least treble the number of persons as each society had representatives on the board, the Governor to make the appointments selected from such list. An agreement was also made that the chairman of each school represented on the board should sign an agreement pledging his school to support the bill as thus agreed upon, and amended, and which is now known as the "Chandler Bill", or House Bill 515, House file 216, introduced by Mr. Chandler, which was done. This union committee then went before the Public Health Committee of the House, and on behalf of the state societies represented gave the Chandler bill their unqualified approval. Two days after this, Dr. Melle Veenboer, of Grand Rapids, President of the State Society of Physio-Medicists, appeared upon the scene, and claimed representation on the board basing his claim upon the fact that his school had been recognized in two former bills. After consultation with the House Committee of Public Health he was told that if he could secure the signatures of Drs. Nottingham and Bell for a re-arrangement of the board, the regulars would not object. He did so, and it was then arranged that the board should consist of ten members; five regulars and five non-regulars of which seven should form a quorum. The bill was then left in charge of your chairman representing the regular profession and Dr. D. M. Nottingham of Lansing, representing the Homeopathics and Eclectics. Your committee, together with your president Dr. E. L. Shurly, appeared before the Public Health Committee of the House several times in support of the bill.

Digitized by Google

When the bill was finally reported out by the House Committee on Public Health, the following amendments were made to Sec. VIII:

At the instance of Representative Anderson, Kent county, line seven, this act shall not apply to * * * * * "nor any legally qualified Osteopath engaged in the practice of osteopathy under the provisions of Act No. 78 of the Public Acts of the State of Michigan of 1897, regulating and licensing the practice of osteopathy in the State of Michigan," and at the instance of Representative Stewart of Wayne county, line ten, "nor to those who do not use material remedies, but confine themselves to religious, mental or spiritual influences in the treatment of diseases."

On behalf of the committee the Chairman took these additions to Attorney General Oren and other attorneys for an opinion as to what rights such an exception gave Osteopaths, Christian Science and similar cults and isms under the act. They were unanimous in their opinion that this exception was purely extraneous or foreign matter, that the bill simply regulates the practice of medicine, surgery and midwifery, and the title of Doctor of Medicine, and as these people were prohibited from practicing medicine or surgery under the act, but had to *confine* themselves to the osteopathic act or to spiritual, mental or religious treatment, with which a medical act had nothing to do from a constitutional standpoint, that this exception neither took anything away from them, or gave them any rights or standing that they did not already possess. Also, that if the Christian Scientists and others exempted assumed the title of "Doctor," they came out from the exception under the act and assumed a material title, and could be prosecuted for it. In other words and briefly, the act promises not to prosecute them if they do not practice medicine or surgery or call themselves doctors. They promise the same protection to "temporary assistants in cases of emergency," and "to the domestic administration of family medicine," in Sec. VIII, lines six and seven. Nobody would assume, though, that the bill gives any professional standing to the administrator of family medicines. After careful considera-

Digitized by Google

tion and consultation with some of the leading medical men of the state, and also after sizing up the sentiment of the House with regard to the addition to Sec. VIII, for which the State Medical Committee was in no way responsible, the committee came to the conclusion that it would not offer active opposition to such addition, as there did not seem to be any vital principle involved, and that opposition to it would result in the defeat of the bill on account of some of the most prominent members of the House insisting upon this addition, and declaring their intentions to defeat the bill if taken out. Taking all these circumstances into consideration and recognizing the immense good to the profession to be accomplished by the passage of the act, (which is by far the best medical bill ever passed by the House, and the only one not mutilated beyond recognition in its passage) the committee, acting as it thought in the best interests of the profession, offered no opposition, and does not propose to do so in the future. It is backed also in this treatment of the subject by the Chairman of the Homeopathic and Electic societies. When a committee goes to the legislature asking for legislative privileges, it is necessarily to a greater or less degree on the defensive, and it is not in a fair or good position to attack classes opposed to it in practice and principles. But two years from this, having in a large degree our legislative rights which cannot easily be taken away, we will be in a position to demand legislation regulating the practice of hypnotism which will do away to a large extent and regulate a condition growing yearly more serious.

As you already know the bill passed the House April 19th, without amendment by a vote of seventy-one to nine against, and is now in the Public Health Committee of the Senate. The outlook for its passage in the Senate without amendment is very probable, and very little doubt seems to exist among those capable of judging in such matters that the Chandler bill will ultimately become law.

The leading features of the bill not previously referred to are as follows:

Digitized by Google

1. The re-registration of all physicians in the state upon furnishing sufficient proof to the board that they are legally registered under the Act of 1883. This will undoubtedly result in holders of bogus and fraudulent diplomas not being able to re-register. It is sufficient to note that the "graduates" and friends of the so-called "Independent Medical College" of Chicago fought this section "tooth and nail," but were unable to defeat it in the House or Committee.

2. The recognition of foreign certificates of registration or licenses were the requirements for registration shall be deemed by the board to be equivalent to those of the Michigan Act. Provided, however, such country shall accord a like privilege to holders of certificates from the Michigan board.

3. The non-registration of certificates or licenses from other states in the Union unless deemed by the board to be equivalent to those of the Michigan act, provided, such state shall accord a like privilege to holders of certificates from the Michigan board.

4. The recognition of diplomas from such legally incorporated and reputable colleges of medicine in the United States as shall be approved and designated by the board of registration.

5. The examination of all candidates for registration not provided for as above.

6. The reporting monthly to the board by the several county clerks in the state of the registrations made, removals, deaths, etc.

7. The enforcement of the act by the board direct, not by local authority as at present under the old act.

Your committee takes great pleasure in acknowledging the assistance and support it received from the several medical societies in the state, the press, and from the profession as a whole, without which it could have accomplished very little. It is under special obligations to the president of this society, and Dr. George E. Frothingham, of Detroit, for work and advice; to the late Dr. Geo. J. Northrop, of Marquette, who spent several days in Lansing in the interests of the bill on two different occasions, and whose work and advice were in-

Digitized by Google

valuable; to Hon. Wm. Chandler, the introducer of the bill, and the Hon. L. A. Goodrich, chairman of the Public Health Committee of the House, and also to the Hon. Geo. Howell, M.D., father of the present act of 1883. Dr. Howell has noticed a bill of his own, and had worked up a very favorable sentiment in its favor. Notwithstanding this, when the committee decided against his bill, he cheerfully "took off his coat" and worked day and night for the Chandler bill, and to him in a very large measure is due the success of the bill in the House. Your committee would also refer as a matter of justice to the assistance secured from Dr. D. M. Nottingham, of Lansing, who represented the state societies of the Homeopaths and Eclectics. They found in Dr. Nottingham not only a sincere and earnest advocate of medical legislation, but also one extremely liberal and honorable in the highest sense of these terms, and whose word was as good as a bond.

B. D. HARISON, Chairman.
D. MILTON GREENE.

DR. HITCHCOCK: What are the chances of the bill passing ?

DR. GREENE: The bill has passed the House and I think it will pass the Senate. I think it will become a law.

THE PRESIDENT: Now, gentlemen, what will you do with this report ?

DR. HITCHCOCK: I move that the report be accepted and the committee continued.

Which motion was carried.

DR. BOISE: I suppose that means we endorse the law and urge the present bill ?

THE PRESIDENT: Yes sir, but it will be in order to offer any resolution to go direct to the Senate.

DR. INGLIS: I move you that the secretary be instructed to write to the Senate Committee having this matter in charge a formal endorsement of the bill, signed by the Secretary and President of the State Medical Society.

Which motion was seconded.

DR. CONNOR: I would move an amendment to that and that is that every individual member who believes that that bill will advance the interests of this profession write to the

Digitized by Google

members of the Legislature whom he knows, urging them to pass it. Now this is a personal matter and a letter from the Secretary will carry with it just the weight of the Secretary, but a letter from the Secretary, and Dr. Shurly and Dr. Inglis and the rest will have the weight that they personally have with their representatives and will be very much more likely to secure results, so I move, as a substitute, that every member be urged to write to his representative today that he push that bill through.

DR. INGLIS: I accept that amendment.

DR. BOISE: I simply wish to object. If the people want Osteopaths, Christian Scientists and Quacks, let them have them, I have no objection to it, but I do object to being a party to anything that asks them not to have them, and I do not propose to do any such thing. I shall object to the President and Secretary writing to the Senate.

THE PRESIDENT: Do you mean to interpose an objection to the question coming before the House?

DR. BOISE: Yes, sir, and urging every member to write to his representative. I do not think that it is best myself.

DR. CONNOR: I think you do not understand me. I am in just exactly Dr. Boise's position. I do not think the bill will be advantageous to the profession, but what I wanted was that every one who did believe in it should take a way that would make that belief effective.

DR. BOISE: Not a society endorsement ?

DR. CONNOR: No, it is the individual, that is what I am after. And I tell you, gentlemen, as a matter of politics, it is this individual effort that tells, and it will fully meet the Doctor's objection, and for those of us who do believe in it it is the effective way.

DR. BOISE: You do not urge those who do not believe in it to write ?

DR. INGLIS: I accepted his suggestion but I am afraid I misunderstood him. I do not withdraw my original motion that the society endorse the bill. I am willing to take Dr. Connor's suggestion, that is, added to that, but I don't want to take Dr. Connor's suggestion as a substitute.

Digitized by Google

THE PRESIDENT: The chair understands the main question is on Dr. Inglis' motion. The amendment to Dr. Connor's motion and the vote will have to be taken upon the amendment, inasmuch as the amendment was not accepted:

A MEMBER: The amendment was accepted.

THE PRESIDENT: It was accepted under a misapprehension and withdrawn. The chair understands that there is before you first the amendment and next the principal question.

DR. BOISE: Dr. Connor stated plainly that it was a substitute that he offered.

THE PRESIDENT: It was understood when he first stated it that he wanted to amend Dr. Inglis' motion. As the chair understands it the question is upon the amendment. The amendment is that each individual member of the society shall be required to write to his or her representative at Lansing to aid in the passage of the bill now before the senate. The principal question was that the action of the society be taken through its officers, its President and Secretary, and that a resolution endorsing the bill be sent to the Chairman of the Health Committee of the Senate, representiug officially this association. That is the way the chair understands it now. Are you ready to vote on the amendment?

The previous question having been demanded, and a rising vote being called for, the question was put and declared lost.

THE PRESIDENT: Now the principal question, the motion of Dr. Inglis, is before you. All those in favor of the motion of Dr. Inglis, that the society officially endorse the bill known as the Chandler bill, now in the senate, please say aye.

The motion prevailed.

THE PRESIDENT: The next order of business will be the report of the special committee on Dr. Leonard's Resolution to Debar Abortionists from Practice, Dr. George E. Ranney of Lansing, Chairman:

DR. LEONARD: As the original mover of the motion asking for this committee, and as no member of the committee is present, I wish to say that I think the measure is important enough to have the committee continued for another year. I hope by that time we will get some report from them.

Digitized by Google

THE PRESIDENT: You have heard the motion that has been made and seconded that the committee be continued another year. Those in favor say aye.

Carried.

THE PRESIDENT: The next special committee is that one provided to revise the constitution and by-laws, W. J. Herdman, Chairman. The Chairman is not here. One of the other members is Dr. Leonard.

DR. LEONARD: I will state that there has been no meeting of the committee called during the past year for the consideration of this special work. I would state further that the special contradictory clause that this committee was appointed to correct at our last meeting, was practically corrected by a motion that was brought before the society for a change of the by-laws and then adopted, viz: That the party receiving the second highest number of votes for President should be the First Vice-President. That was really the clause that called out the formation of this committee. Further than that I have no report to make. I will state again that that clause in our constitution has really been corrected, so that the law under which we will work this session will correct itself, namely, that the party receiving the second highest number of votes for President shall be our First Vice-President for the ensuing year.

DR. BULSON: I move that the committee be discharged.

Which motion was seconded and carried.

THE PRESIDENT: There is no report of the committee on program for 1899 except that already made.

We now come to miscellaneous business, the first of which in order will be the nomination of candidates for President and Secretary.

DR. WEAVER: It affords me unbounded pleasure at this time to nominate for President of this society Dr. Philo D. Patterson of Charlotte.

DR. J. H. REED: It gives me very great pleasure to present the name of Dr. A. W. Alvord for president.

Digitized by Google

DR. BRADLEY: In behalf of the physicians of Eaton Rapids I rise to support the nomination of Dr. Patterson for president.

DR. HITCHCOCK: I gladly support the nomination of Dr. Alvord.

Whereupon nominations for president were declared closed.

DR. CHARLES W. HITCHCOCK: I take great pleasure in renominating for the office of Secretary Dr. Collins H. Johnston, of Grand Rapids.

DR. BULSON: I want to second, the nomination of Dr. Johnston.

DR. E. B. SMITH: I would like to present the name of Dr. J. H. Sanderson for the office of Secretary.

There were no other nominations for the office of Secretary.

DR. HICKEY: I understand from the report of the Secretary that through an omission the honorarium of the Treasurer was not allowed at the last annual meeting. In order to correct that I would move that the honorarium of the Treasurer, $100 per year, for the last two years be ordered paid by the society; and that the honorarium of the Secretary for the two past years be fixed at $250, and ordered paid.

Which motion prevailed.

DR. CARSTENS: Under the head of miscellaneous business I have a motion to make. By looking at the program you can see how the Section of Obstetrics and Gynecology has dwindled down. It has two measly papers, and the attendance is usually about three or four. Everybody who wants to read a paper before that section refrains from doing so because they naturally like to have some audience to discuss the papers, and as the thing has got down so small, I would move that the Section on Obstetrics and Gynecology be dropped and obstetrics be added to the practice of medicine, and gynecology be added to the section on surgery, so that we will have two sections. Then we can discuss these papers and each section will have a large audience. This society is not large enough for three sections. This is an amendment to the constitution and I move that it do lie over one year in the usual way.

Digitized by Google

THE PRESIDENT: Under the law this constitutes an amendment to the by-laws and must lie over for one year. It will therefore come up next year.

The report of the Committee on Necrology will be read by the secretary.

Report of the Committee on Necrology:

The work of your Committee on Necrology for the year now ending has been rendered easy by its taking advantage of the obituary notices, written by friends, of the deceased members of this society whose names are subjoined: Dr. Jas. C. Willson of Flint, having kindly written of Drs. Luke N. Beagle and Henry Carlton Fairbank, while the sketch of Dr. Samuel T. Beardslee, is abridged from the Armada *Graphic* of July 8th, 1898. It is apparent from the reading of these sketches that three choice spirits, and worthy representatives of the most benevolent of professions, have been withdrawn from our fellowship, and the sentiment of Dr. Beardslee, in the journal already quoted, may fittingly be employed as our own closing sentence, as we dismiss to the house of many mansions this noble and lamented trio of our brethren:

"Life's work well done,
Life's race well run,
Life's crown well won,
Now comes rest."

Luke N. Beagle, M. D., of Flint, Mich., died Dec. 24th, 1897. He was a graduate of the Medical Department of the University of Michigan, class of 1879, and a member of the State Medical Society, and also of the American Medical Association. He was a worthy and successful physician, highly esteemed by his fellow practitioners in the city of Flint and county of Genesee, for his large and extensive practice reached throughout the county. Born in December, 1831, he was still young and in his prime when the summons came so suddenly and unexpectedly, that his friends were greatly shocked when they heard of his untimely taking away. The doctor married, in 1867, Miss Lydia Griffith of Detroit, who survived the death of her husband only a few months. They

Digitized by Google

leave two daughters to mourn the loss of the kindest and most loving of parents.

Henry Carlton Fairbank, M. D., was born in Rose, N. Y., Dec. 20th, 1824, and died at Petoskey, Mich., July 5th, 1897. He graduated in medicine from Willoughby College, in 1844. He first settled at Linden, Genesee county, and from there moved to Grand Blanc in 1848, and to the city of Flint in 1864, where he continued in active practice up to the time of his death. He was a conscientious, upright and honorable gentleman, in all the relations of life, very successful as a practitioner of medicine, and left a memory fragrant with the aroma of generosity and kindness to the poor and suffering in the community where he lived so long, an honor to the profession and to the city of his adoption. Dr. Fairbank was a member of the American Medical Association and of the North-Eastern Medical Society of Michigan.

Dr. Samuel T. Beardslee was born in New Jersey, August 19th, 1828, moved with his parents to Oakland county, Michigan, in 1832, Arriving at manhood, he took a medical course at Ann Arbor of two terms, also a course in chemistry, and graduated from the Albany Medical Institute in 1856. In 1857 he came to the villege of Armada, and began the practice of his profession, which he prosecuted until about two years ago. December 18, 1876, he married Betsey McAuley, of Ontario county, New York, who, with two sons, survives him. For the last three years he has been failing in health, and for the greater part of that time he experienced intense pain and suffering, which were borne with exemplary patience and fortitude. On Saturday night last, July 2d, he passed away from earth.

All of which is respectfully submitted,

ARTHUR H. BIGG,
Chairman.

DR. SMITH: I move that this report be adopted and spread upon the minutes of the association.

Carried.

DR. LEONARD: I have a motion to offer. We are all more or less interested in collecting our bills. This motion is to se-

Digitized by Google

cure a little state legislation to help us in that if possible. The motion that I will present is for the formation of a committee. The method I have in mind for the collection of physicians' bills, after the death of the party for whom the services were rendered, is copied after the New York law:

I move you, Mr. Chairman, the appointment of a committee for the purpose of introducing a bill in our legislature insuring to the profession the payment of debt after the death of the debtor.

Now quoting from the New York law: "Executors and administrators must proceed to pay debts in the following order.

1st. Debts entitled to a preference under the laws of the United States.

2nd. Taxes assessed on the property of the deceased previous to his death.

3rd. Debts of the deceased for services rendered and material furnished by physicians. pharmacists, nurses and undertakers.

4th. Judgments docketed and decrees entered against the deceased, according to the priority thereof.

5th. All recognized bonds, sealed instruments, notes, etc.

All debts specified in the third class shall become due upon the death of the deceased, and shall be paid within ninety days thereafter."

The third class is the one we are interested in. I move you, Mr. Chairman, for the appointment of a committee of three to wait upon our state legislature to see to the framing of a bill embodying the several provisions I have read.

Which motion was supported and carried.

THE PRESIDENT: By whom shall this committee be appointed ?

DR. LEONARD: By the Chair.

The president appointed as such committee Dr. C. H. Leonard of Detroit, Chairman; Dr. Ralph H. Spencer, Grand Rapids, and Dr. J. H. Reed, Battle Creek.

THE SECRETARY: According to section two of article six of our by-laws, the American Medical Association requires that

Digitized by Google

this society shall endorse all district, county, city or town medical societies before they can be represented in that association. The following societies are now on the list of the American Medical Association:

Michigan State Medical association.
Bay County Medical Association.
Calhoun County Medical Association.
Cheboygan County Medical Association.
Detroit Academy of Medicine.
Detroit Gynecological Society.
Grand River Medical Society.
Grand Rapids Academy of Medicine.
Kalamazoo Academy of Medicine.
Marshal Academy of Medicine.
Northeastern District Medical Society.
Pontiac Medical Society.
Washtenaw County Medical Society.

Two other societies have applied to-day, the Detroit Medical and Library Association, and the Berrien County Society, and they have both adhered in their constitution and by-laws to the code of ethics of the American Medical Association, as required by this by-law, and I would suggest that somebody make a motion that we endorse them and admit their members to membership in the American Medical Association.

DR. VAN ZWALUWENBERG: I would move that these societies be endorsed.

Which motion was seconded and carried.

The Annual Addresses were then delivered as follows:

The Value of Complete Diagnosis, by Dr. Fritz Maas, Detroit, Orator of Section on Surgery ond Ophthalmology.

Pelvic Diseases in Women and Insanity, by Dr. Walter P. Manton, Detroit, Orator of Section on Obstetrics and Gynecology.

Adjourned.

Digitized by Google

SECOND DAY—GENERAL SESSION.

FRIDAY MAY 4th.

The society was called to order at eleven o'clock a.m., by the president.

Dr. Eugene Smith, Chairman of the Committee on Admissions, made a further report, giving the names of a number of applicants for membership and recommending that they be elected, which report upon motion was accepted and the persons named therein elected.

Ames, Edward, Kalamazoo.
Anderson, Christine, Detroit.
Bird, W. G., Milford.
Carman, R A., Saginaw.
Coller, Frank S., Vicksburg.
Clark, W. B , St. Louis.
Chamberlain, Geo. L , Newberry.
Duggan, D. D., Battle Creek.
Ferguson, J. E., Bangor.
Fernandez, L. P., Kalamazoo.
Foote, F. M., Marshall.
Green, Geo. W., Battle Creek.
Jones, John H., Dowagiac.
Kirkpatrick, C., Adrian.
Leighton, N. E., Hopkins Station.
Mowers, J. H., Charlotte.
McKibben, J. H., Kalamazoo.
Patterson, E. B., Manistique.
Ransom, T. H., Bloomingdale,
Rhodes, L. G., South Haven.
Rockwell, A. H., Kalamazoo.
Stone, W. A., Kalamazoo.
Shillito, E., Marcellus.
Scidmace, Arthur W., Three Rivers.
Toan, J. W., Kalamazoo.
Wilbur, C. T., Kalamazoo.
Wilbur, E. P., Kalamazoo.
White, M. C., Dowagiac.

The above named members are recommended by your Committee on Admissions to be accepted as members of the Michigan State Medical Society, after complying with the proper requirements.

EUGENE SMITH,
H. H. SCHABERG.

Dr. L. E. Maire, Chairman of the Finance Committee, presented the following report:

We, the undersigned, members of the Finance Committee, have examined the books and vouchers of the Treasurer and have found them correct and complete. We would suggest that bids be asked for all printing, and that the amount of cash on hand being $611.89, and should a corresponding balance be found the year following, the society consider the reduction of annual dues at that time. We find the system of keeping records of the Treasurer very simple and satisfactory,

Digitized by Google

and recommend a special vote of thanks be extended to him for his painstaking labor.

Signed,

L. E. MAIRE,
Chairman Finance Committee.

On motion, the report was accepted and placed on file.

DR. HITCHCOCK: I move you that such societies on the following list that are not already recommended for full affiliation, through this society, with the American Medical Association, be placed upon that list:

The Academy of Medicine of Grand Rapids.

The Medical and Surgical Society of Grand Rapids.

The Monroe County Medical Society.

The Upper Peninsula Medical Society.

Saginaw County Medical Society.

Detroit Academy of Medicine.

Detroit Gynecological Society.

These were recommended last year. And also the following two societies which were recommended yesterday:

The Berrien County Medical Society.

The Detroit Medical and Library Association.

I move that these societies all be recommended for full affiliation.

Which motion was supported.

DR. MAIRE: I would like to make an amendment to that, that the Wayne County Medical Society be included in that list.

THE PRESIDENT: It already has been.

DR. BOISE: I would like to know if the constitution and by-laws of each of these societies have been placed in the hands of the Secretary in accordance with our constitution and by-laws ?

THE PRESIDENT: The Secretary says they have been.

DR. H. M. KING: If I understand what this affiliation means, I believe that at any time during the year any member of these societies who will procure the endorsement of his President and Secretary may be admitted to the society without attending a meeting or without the name coming before

Digitized by Google

the State Medical Society. If that is the case, I should like to object to affiliation with one of the societies there, the Medical and Surgical Society of Grand Rapids.

THE PRESIDENT: That is very near correct, except that the member is obliged to agree to the constitution. If you will yield the floor a minute I will ask the secretary to read the conditions.

THE SECRETARY: This matter came up last year as you will all remember in the report of a committee appointed for the purpose a year before, the chairman of which was Dr. Griswold of Big Rapids. Dr. Griswold of Big Rapids wrote to every medical society in the state that he could get the name of to get their constitution and by-laws, and he picked out from those the Academy of Medicine of Grand Rapids, the Medical and Surgical Society of Grand Rapids, the Monroe County Medical Society, the Upper Peninsula Medical Society, Saginaw County Medical Society, Detroit Academy of Medicine and the Detroit Gynecological Society as the only ones which in his opinion were entitled to recognition by the society at that time. They all recognized the code of ethics in their constitutions and by-laws and he recommended, as a start, that we affiliate with them and add others as we come to them. When the matter came up, several of the old members of the society said to him at our meeting, "Why, what is the matter with the Calhoun County Society and what is the matter with the Northeastern District Medical Society; that has been recognized for thirty years both here and in the American Medical Society," and the doctor could only say that they had not sent their constitution and by-laws to him, or that in looking them over he found they had omitted to mention their adherence to the code of ethics in their constitutions and by-laws. So we ended up by referring that part of the report back to the committee for another report this year, and Dr. Alvord made a substitute that we affiliate with societies that have been in affiliation with the American Medical Association for a long period of years, and that is the list I read yesterday and to which we added yesterday. Now there were in this list that was recommended by Dr. Griswold

Digitized by Google

for affiliation last year three or four societies that have just as much right to be affiliated with us as this list that are in affiliation with the American Medical Society, for instance, the Detroit Gynecological Society and the U. P. Society. So the object of this motion today is simply to include in the American Medical Association's list and that we now affiliate with two or three other societies that are not down on the list of those we saw fit to affiliate with last year.

DR. H. M. KING: I would offer an amendment to the motion, to exclude for the present, and until affiliation with the American Medical Association has been made, the Grand Rapids Medical and Surgical Society, many of the members of which are friends of mine and whom I would be pleased and proud to meet on an equality, but it also contains others whom I do not care to meet on that basis.

DR. HITCHCOCK: I accept the amendment.

DR. BULSON: I was a member of that committee and in considering the affiliation of medical societies we found that there were a number that had not adopted the code of medical ethics, and there was no provision in the constitution and by-laws about receiving members—simply that they were reputable physicians. It was our policy then that every society that had no provision in their constitution and by-laws regulating admission, which required them to be graduates of reputable medical colleges recognized by the American Medical Association, should not be recognized. Some of the older members objected, that they had reputable physicians, regular and all right who were not graduates. Those members who had joined these societies previously it did not exclude, of course, but it was simply to keep the bars up against admission hereafter. The object of this society is to raise the standard of medical education, and if the society in Grand Rapids has not in its constitution this provision requiring members to be graduates of a regular medical college, it should be excluded until it does adopt it.

DR. EUGENE SMITH: As Chairman of the Committee on Admissions I would state that the only societies from whom we received applications this year—and they were worked up

Digitized by Google

a little in order to get them—were the Berrien County and the Detroit Medical and Library. We understood also that the Wayne County was not on the list. We sent word to the Wayne County to that effect, but it seems that the Wayne County had been placed on the list without the knowledge of the committee, so that it is there.

Now the better way out of this question, inasmuch as there are one or more other societies mentioned, would be to refer the matter to the Judicial Council that the doctor speaks of; I would also like to refer the Saginaw County Medical Society to the Judicial Council from this list, and it will take but a comparatively few minutes for the Council to meet and hear anything from the Saginaw or Grand Rapids members and they can then report.

THE PRESIDENT: Do you call for immediate attention?

DR. SMITH: No, sir; I will move that the Grand Rapids Association and the Saginaw County Association be referred to the Judicial Council for immediate action, if you please.

THE PRESIDENT: There is now a motion before the assembly and an amendment which has been accepted. Do you desire to make that as an amendment or do you desire to wait and vote on this?

DR. SMITH: It would seem to me proper that they should be separated. I move an amendment then so that they may be voted upon ad seriatum, if necessary.

THE PRESIDENT: The Chair could not entertain that as a motion then. The motion, as made by Dr. Hitchcock, was that these associations mentioned be accepted in affiliation with the state society, and the gentleman from Grand Rapids arises and makes an amendment that the Grand Rapids Medical and Surgical Association be excepted. I make a division of the question.

DR. SMITH: Then I amend the amendment by moving that the Saginaw County and the Grand Rapids Association be referred to the Judicial Council.

DR. LEONARD: The two societies that you wish excepted, so far as we know are the only ones in this list read that are not in affiliation with the American Medical Association?

Digitized by Google

THE SECRETARY: No, sir, they are not.

DR. LEONARD: Then I would amend this amendment.

THE PRESIDENT: You cannot amend it again. There are two amendments.

DR. LEONARD: Then I will make mine as a substitute.

THE PRESIDENT: A substitute is an amendment also.

DR. BOISE: I move to lay the matter on the table for one year.

Which motion was supported.

DR. EUGENE SMITH: My understanding of this question is that the American Medical Association refuses delegates from any medical society which is not in affiliation with its state society. I think I am correct in that. And that being the case these societies should be in affiliation or not with the state society before the meeting of the American Medical, so that they may send delegates to the American Medical.

DR. LEONARD: That is one of the points I wanted to cover. I wanted to cover those that are already in affiliation with the American Medical Association, that they will be regarded as in affiliation with us. Those that are not will hold over another year.

THE PRESIDENT: That is the case now. The question now is to lay on the table. All those in favor please say aye.

The motion did not prevail.

DR. BOISE: Now I will simply state why I made that motion. We have a provision whereby men can be admitted without coming before the society in any way, without coming before the committee on admissions, if they come with the signatures of the president and secretary of a society that is recognized.

DR. SMITH: In affiliation.

DR. BOISE: The word is "recognized" if I recollect right. But we know there is not only one society but many probably—we hope not—where there are influential men who can get the signatures of their officers, who may be regular graduates and have diplomas and everything of that kind, but they are men whom you might say are not reputable in other respects. Now it seems to me the State Society instead of

Digitized by Google

lowering the standard and putting down the bars should be more particular as to whom it lets in than it has been, and that this provision allows. That is the reason I wanted to put the matter on the table until it could be fully discussed, not that I wish to bar out anything that is entitled to representation.

DR. CARRIER: Would a motion to separate the question be in order?

THE PRESIDENT: No sir, it is disposed of for this year.

DR. CARRIER: Oh, no, the motion was lost. I want to know if we could divide that motion. There is no unanimity of opinion regarding most of these societies. There are only one or two that an objection is raised to. These societies are not allowed to send a delegate to the American Medical Association; that is part of the object of their being recognized by this society. Let us make a motion accepting those and then let the others go over. I will move you for a separation of the motion and for the admission of those with the exception of the Saginaw and the Grand Rapids societies.

THE PRESIDENT: As the Chair understands it that question is disposed of, when it was laid upon the table.

DR. CARRIER: No, that motion was lost.

THE PRESIDENT: Oh, yes. Well, the chair is mixed.

DR. LEONARD: The status as I understand it now is, the amendment of Dr. Smith, who changes his amendment so as to disbar or at least so as not to accept in this report any who have not now their by-laws in such a shape as to be recog nized. Am I right?

DR. SMITH: In a measure so, yes, sir.

DR. LEONARD: So that the amendment it seems to me covers this whole matter and if you will vote upon the amendment and exclude all those whose by-laws do not now recognize the code of ethics, you have covered the whole ground.

DR. BOISE: The point still remains that by recognizing those societies you admit every member of those societies simply by presenting the signatures of the president and secretary of his society, without any opportunity for his coming before the committee on admissions or the society in any way.

Digitized by Google

They can come into the society without any further effort on their part.

DR. SMITH: Dr. Boise is right.

DR. CARRIER: Then why not leave out every society but those we are positive of; just admit those and let's get rid of all the rest of them. We need not specify the Grand Rapids and the Saginaw—there are other societies—let them alone and just vote on those we are positive of, and we can get through this business in a moment.

A MEMBER: I am in favor of having Dr. Smith's amendment voted upon. I am willing to put those two societies before the Judicial Council.

THE PRESIDENT: The question is now upon the amendment of Dr. Smith that these two societies mentioned be referred to the Judicial Council.

DR. LEONARD: There are four of them.

THE PRESIDENT: No, only two mentioned.

DR. LEONARD: Of those whose by-laws do not accord.

THE PRESIDENT: The two societies were the Saginaw Medical Association and the Grand Rapids Medical and Surgical Association.

DR. HITCHCOCK: I rise to a point of order. There is a disposition to take up this matter seriatim, one at a time. I want to know if it is in order for me to withdraw the original motion at this time? If the amendors and those who seconded it will consent, I will withdraw my motion. If that is done that will leave it where we can get at it one at a time.

DR. SMITH: I accept that.

THE PRESIDENT: It is withdrawn.

DR. CARRIER: I move you that these societies that were recommended last year, as read by Dr. Hitchcock, except those societies about which a doubt may be expressed regarding their right to be admitted to this society either by not subscribing to the code of ethics as adopted by the American Medical Association, be accepted.

DR. SMITH: That does not cover the ground. That places us in the same muddle we have been in. The better way, as

Digitized by Google

suggested by Dr. Hitchcock, is to take up each one of these societies as named and either refer it or accept it.

DR. DOCK: I make a motion that this list be referred in its entirety to the Judicial Council to report upon. Their report will separate things.

Which motion was supported.

THE PRESIDENT: There are only two left, the Upper Peninsula and the Monroe are the only ones left. Dr. Carrier's motion was not seconded so that there is nothing before the house.

DR. SMITH: I support Dr. Hitchcock's motion. Dr. Carrier's motion was not seconded. I support Dr. Hitchcock's motion that it be taken up seriatim. I will make a new motion that the list of societies be taken up seriatim and voted upon for admission.

Which motion was supported.

THE PRESIDENT: It is moved and seconded that the whole list of societies be taken up seriatim and voted upon.

The motion prevailed.

THE PRESIDENT: The Secretary will read their names in the regular order.

DR. CONNOR: I would like to know the standard that we are to compare these societies with in order to know whether we shall recognize or not recognize:

THE PRESIDENT: Affiliation with the American Medical Association, the constitution and by-laws which will allow them to become affiliated with the American Medical Association.

DR. CONNOR: Then all we have got to know is whether these counties have officially recognized the code of ethics or not?

THE PRESIDENT: Yes, sir.

THE SECRETARY: "The Academy of Medicine of Grand Rapids."

A MEMBER: I move you that the Academy of Medicine of Grand Rapids be recognized.

Which motion prevailed.

Digitized by Google

THE SECRETARY: "The Medical and Surgical Society of Grand Rapids."

A MEMBER: I move that the question of the affiliation of the Grand Rapids Medical and Surgical Association be referred to the Judicial Council.

Which motion prevailed.

THE SECRETARY: "The Monroe County Medical Society."

DR. SMITH: I move its adoption.

DR. LEONARD: Is that in affiliation with the American Medical?

THE SECRETARY: Not at present.

DR. SMITH: I move the adoption in our state society.

DR. LEONARD: I understand this Monroe County Medical Society does not affiliate and its by-laws do not require it to affiliate.

DR. SMITH: I think you are mistaken.

THE SECRETARY: It could if it wanted to, but it never has asked to.

DR. SMITH: It subscribes to the code of ethics; that is sufficient for us.

THE SECRETARY: It does, yes sir; I know that.

DR. SOUTHWORTH: I am the Secretary of the Monroe County Medical Society; I can answer for that: We have a very small society and it makes very little difference whether we are affiliated with the state society or not, because the members of the Monroe County Medical Society do not take enough interest in the society to even attend their own meetings. There are several of them who are already members of the state society and haven't attended any of the meetings for several years. I move you that the Monroe County Society be not affiliated and make it harder for those men to get in.

Which motion was supported.

DR. LEONARD: I move that it be referred to the Judicial Council.

THE PRESIDNT: Does the mover accept that amendment?

DR. SOUTHWORTH: Yes, sir.

The motion last made prevailed.

THE SECRETARY: "The Upper Peninsula Medical Society."

Digitized by Google

It was moved and seconded that the Upper Peninsula Medical Society be accepted in affiliation with the state society.

Which motion prevailed.

THE SECRETARY: "The Saginaw County Medical Society.'

DR. SMITH: I move its reference to the Judicial Council.

Which motion was supported and carried.

DR. W. H. HAUGHEY: I hereby give notice of an amendment to one of the by-laws, to be acted upon next year. I move to amend section three of article four of the by-laws by striking out all after the words "forfeited and lost" in the seventh line, and substituting instead the following clause: "Persons who have been dropped from membership for non-payment of dues may rejoin the society by complying with the conditions governing the admission of new members." I just wish to notice this for action next year.

DR. LEONARD: I desire to offer the following preamble and resolution:

Resolved that a bill providing for the payment of debts after the death of debtor be introduced into our State Legislature, its provisions being mainly as follows: Executors and administrators must proceed to pay debts in the following order: 1. Debts entitled to a preference under the laws of the United States. 2. Taxes assessed on the property of the deceased previous to his death. 3. Debts of the deceased for services rendered and materials furnished by physicians, pharmacists, nurses and undertakers. 4. Judgments docketed, and decrees entered against the deceased according to the priority thereof respectively. 5. All recognizances, bonds, sealed instruments, notes, bills, and unliquidated demands and accounts. (Preference shall not be given in the payment of a debt over the other debts of the same class except those specified in the fourth class.) All debts specified in the third class shall become due upon the death of the deceased, and shall be paid within ninety days thereafter.

DR. BELKNAP: I move you the adoption of the resolution, Mr. Chairman.

The resolution was supported and carried.

Digitized by Google

DR. HARISON: I would like to call the attention of the society to the necessity, in the event of the Chandler Bill becoming a law, of furnishing the Governor with a list of fifteen names for appointment on the Board. I don't know whether the President has power or not in the interim to do that, but I think it would be well to have an understanding in the matter. I would therefore move you that the President of the society furnish the Governor, according to section one of the act, with the names required therein at the proper time.

DR. BELKNAP: I support that motion.

DR. HITCHCOCK: It is rather an important matter and I would therefore move to amend the motion by including the Judicial Council—that the President and Judicial Council may confer on this list of persons to represent this society.

DR. HARISON: I will accept that amendment.

The motion prevailed.

Dr. Osborne of Kalamazoo read a letter addressed to him and signed by Doctors W. F. Breakey, G. E. Ranney, J. B. Griswold, and others, and a letter from the Secretary of the Loyal Legion urging him to use his efforts to get the State Medical Society to fix its time of meeting so as not to conflict with the annual gathering of the Loyal Legion. Dr. Osborne moved that the meeting of the State Medical Society hereafter shall not be held on the first Thursday in May. After considerable discussion, participated in by Doctors Alvord, Carrier, Stewart, Hitchcock, Smith and Strangways, the motion was put and declared lost.

DR. AARON: Dr. Leonard presented a resolution a year ago before the society to debar abortionists from practice. There is now a law pending before the legislature to that effect and I would therefore move that a communication be sent to the legislature signed by the Secretary and President of this society endorsing a bill looking towards the enactment of a law which will prevent a person convicted of abortion, or of a felony, practicing medicine in this state.

Which motion prevailed.

DR. LOWRY: Dr. A. P. Drake of Hastings, who is a member of this society, but who is now an old man, in feeble

Digitized by Google

health and unable to attend the meetings of the society, wishes to keep up his connection with the society. I would therefore move you that he be continued as an honorary member and be relieved from the payment of dues.

Which motion prevailed.

DR. HITCHCOCK: Each year at our meetings I have heard criticism on the part of members, about time wasted in the transaction of general business, and I have heard repeatedly a desire expressed that we might have some sort of a committee to whom might be referred routine business, and which should weary the society only with those points necessary to come before it. Now to that end I move you that a business committee of three be appointed by the incoming President to whom shall be referred all of the annual reports, except of course that of the Committee on Admissions, at the next meeting.

DR. ANDREWS: I support the motion. After some discussion the motion was put and declared lost.

The Secretary read a letter from the Woman's Christian Temperance Union, which upon motion was referred to the Committee on Admissions.

The report of the Nominating Committee, through its Chairman, Dr. Jennings of Detroit, made the following report:

VOTE FOR PRESIDENT.

A. W. Alvord	72
P. D. Patterson	66
H. McColl	1
Total	139

VOTE FOR SECRETARY.

Collins H. Johnston	110
J. H. Sanderson	19
Total	129

The Nominating Committee report the nominations for the ensuing year as follows:

For Second Vice-President, B. D. Harison, Sault Ste. Marie.

Digitized by Google

Third Vice-President, H. W. Longyear, Detroit.
Fourth Vice-President, J. B. Bradley, Eaton Rapids.
For Treasurer, C. E. Hooker, Grand Rapids.
Place of meeting, 1900, Mackinac Island.

C. G. JENNINGS,
Chairman.
G. W. NIHART,
ERNEST SCHEMER,
J. M. SNOOK,
C. B. STOCKWELL,
P. M. HICKEY,
Committee.

On motion, the report was unanimously adopted and Dr. Alvord was declared President and Dr. Patterson First Vice-President for the coming year.

Dr. Alvord having been escorted to the Chair, was introduced by the retiring President.

Dr. Alvord said:

Ladies and Gentlemen:

I appreciate the honor that you have bestowed upon me and it comes especially sweet in that it is not mixed with any effort of my own. Such honors would be robbed of all the comfort that they should bring were they mixed with any political effort. When one's conferrees say, "Preside over us," it is an honor of the first quality.

Gentlemen, I bespeak from you the earnest support, not so much of your President as of the Michigan State Medical Society, that its next meeting at Mackinac may be a grand good meeting and give another push upward to our highest and best ideals.

A vote of thanks was extended by the society to the physicians of Kalamazoo, to the Kalamazoo Academy of Medicine and to the citizens of Kalamazoo for the entertainment provided the members of the society.

DR. HITCHCOCK: It has come to my notice that a member of this society deliberately plagarized a chapter from a standard text book and published it as his own work. He was obliged to withdraw and was expelled from his local society,

Digitized by Google

but has been allowed to remain a member of this society. It is not creditable to us that he should be allowed so to remain, and I move that this matter be referred to the Judicial Council.

THE PRESIDENT: It will be so referred.

Adjourned.

COLLINS H. JOHNSTON,
Recording Secretary.

Digitized by Google

CONSTITUTION AND BY-LAWS

OF THE

MICHIGAN STATE MEDICAL SOCIETY.

CONSTITUTION.

1899.

ARTICLE I.

This association shall be called the "Michigan State Medical Society," and shall be composed of resident, honorary and corresponding members.

SECTION 1. The society shall constantly have in view:

1. The association of the profession for the purpose of mutual recognition and fellowship.

2. The maintenance of union, harmony and good government among its members, thereby promoting the character, interest, honor and usefulness of the profession.

3. The cultivation and advancement of medical science, and of medical literature, and the elevation of the standard of professional education.

ARTICLE II—MEMBERS.

SECTION 1. The resident members shall be regular practitioners of medicine and surgery in the state of Michigan, who shall be elected by vote of a majority at any regular meeting, their elegibility having been previously reported upon by the committee on Admissions, or members of a recognized local medical society, whose good standing is certified by the president and secretary of said society.

Digitized by Google

SEC. 2. Honorary members shall only be admitted by a vote of two-thirds of the members present at a regular meeting, having been first recommended by a committee on admissions. The whole number of honorary members shall not exceed one hundred.

SEC. 3. Corresponding members may be non-residents of Michigan, and shall be elected by a two-thirds vote at any regular meeting, having been first recommended by the committee on admissions.

ARTICLE III—OFFICERS.

SECTION 1. The officers of this society shall be a president, four vice-presidents, a recording secretary, and a treasurer, all of whom shall be elected annually.

SEC. 2. The president, first vice-president, and recording secretary shall be elected by ballot in a manner hereinafter provided. The second, third and fourth vice-presidents and treasurer shall be nominated by the committee on nominations.

SEC. 3. There shall be two ballots cast by each voter, which shall be folded separately; upon one shall be written "president." and the name chosen by the voter for that office; upon the other, "secretary," and the name chosen by the voter for that office.

SEC. 4. There shall be a locked ballot box which shall be in the custody of the committee on nominations, and shall be placed in or about the lobby of the hall where the general sessions are held, and shall be kept there for the reception of ballots during each general session. One or more of the committee on nominations shall receive the ballots and deposit the same in the box, at the same time checking the name of the voter from the registered list of those entitled to vote, which list shall have been furnished by the secretary and treasurer; but the name of no member shall be placed upon the list until his dues are paid in full.

SEC. 5. The polls shall close at 12 o'clock, noon, on the last day of the session, at which time the committee on nom-

Digitized by Google

inations will open the ballot box and at once proceed to canvass the vote and report the result to the meeting.

SEC. 6. The person receiving the largest number of votes on the presidential ticket shall be declared president. The person receiving the next largest number of votes shall be declared first vice-president. The ballots for secretary shall likewise be canvassed, and the person receiving the largest number of votes shall be declared elected.

SEC. 7. In the event of a tie vote on the presidential office the presiding officer shall submit the names of the candidates in alphabetical order to the viva voce vote of the meeting, and the one receiving the greatest number of votes shall be declared president, and the one receiving the next highest number shall be declared first vice-president.

SEC. 8. The same course shall be pursued in the event of a tie vote for secretary.

SEC. 9. The nominations for president and secretary shall be made the first order of miscellaneous business at the general session on the morning of the first day of the annual meeting. Under no other circumstances shall nominations or announcements of candidates be made in open session.

ARTICLE IV—STANDING COMMITTEES.

SECTION 1. The following standing committees shall be annually appointed by the president, and each shall consist of five members: 1st, an executive committee; 2d, a committee on finance; 3d, on application; 4th, on admissions; 5th, on necrology; 6th, on nominations.

ARTICLE V—DIVISION INTO SECTIONS.

SECTION 1. To facilitate professional and scientific work three sections are established, namely:

First, A section on general medicine.

Second, A section on surgery and ophthalmology.

Third, A section on obstetrics and gynecology.

SEC. 2. These sections shall hold their meetings in the afternoon, and the society will meet in general executive session in the forenoon of each day. At each annual meeting a chairman shall be chosen for each section who shall serve for one year. A secretary shall be chosen every second year,

Digitized by Google

and he shall serve for two years, and until his successor shall be elected. All papers, communications and matters of a technical or professional nature shall be referred to the section to which they pertain; *provided, however*, that any such paper or subject may, on vote, be considered in general session.

SEC. 3. Each section shall annually elect a member whose duty it shall be at the next annual meeting to deliver an address before the society in general session upon some subject pertaining to the department from which he is chosen.

ARTICLE VI—JUDICIAL COUNCIL.

SECTION 1. A council consisting of nine members shall be elected by ballot, whose duty it shall be to take cognizance of and decide all questions of an ethical or judicial character that may arise in connection with the society. Of the nine members of the council first elected, the first three named on the list shall hold office for one year, the second for two years, and the remainder for three years. With these exceptions the term of office of members of the council shall be three years, three being elected annually.

SEC. 2. The said council shall organize by choosing a President and Secretary, and shall keep a permanent record of its proceedings. The decision of said council on all matters referred to it by the society shall be final and shall be reported to the society at the earliest practicable moment.

SEC. 3. All questions of a personal character, including complaints and protests, and all questions on credentials shall, after the report of the committee on admissions or other presentation, be referred at once to the judicial council and without discussion.

ARTICLE VII—AMENDMENTS.

SECTION 1. A proposed addition or amendment to this constitution shall be presented in writing, and shall lie on the table for one year, and if approved by two-thirds of the members present at a regular meeting it shall be declared adopted.

Digitized by Google

BY-LAWS.

ARTICLE I—MEETINGS.

SECTION 1. The regular meeting of the society shall be held annually at such time and place as the society may, from time to time, determine.

SEC. 2. At all meetings the presence of fifteen resident members shall be necessary to constitute a quorum.

ARTICLE II—DUTIES OF OFFICERS.

SECTION 1. The president shall preside, enforce a due observance of the constitution and by-laws, see that all members of the committees and officers perform their respective duties, appoint all committees not otherwise provided for, give the casting vote only, sign diplomas and all other official documents requiring his signature, and perform such other duties as appertain to his office by usage and custom; also when in his opinion the interests of the society may be advanced, he is authorized to appoint delegates to representation in other state medical societies. All vacancies in office shall be filled *ad interim* by the president.

SEC. 2. The vice-presidents shall assist the president in the performance of his duties, and in his absence shall preside in order of seniority—rank being determined by the order of their election.

SEC. 3. The recording secretary shall keep the minutes, prepare the records of the society for publication, receive the signature and initiation fee of newly elected members, and do such other business as shall be required or as the society may from time to time direct in his department.

SEC. 4. The treasurer shall receive all money due the society, and pay all bills endorsed by the finance committee and countersigned by the president, keeping correct accounts

Digitized by Google

of the same and making a full and detailed account at the annual meeting.

ARTICLE III—STANDING COMMITTEES.

SECTION 1. Standing committees shall keep regular minutes of their proceedings.

SEC. 2. The executive committee shall digest and prepare the business for each meeting, provide suitable rooms for the purposes of the society, recommend plans for the promotion of its objects, and in all things protect and superintend the general interests of the society.

SEC. 3. The committee on finance shall superintend the monetary affairs of the society, inspect and audit all bills and the accounts of the treasurer, and make such an assessment by a *pro rata* tax upon the resident members as may be necessary for the incidental expenses which, however, shall not exceed the sum of two dollars per annum.

SEC. 4. The committee on publication, consisting of the secretaries of the respective sections, together with the recording secretary and one member appointed by the president, shall superintend the printing of such papers as may be ordered to be published, so that they may be issued upon uniform paper under the title of "Transactions." And in the performance of their duties they are authorized to withhold from publication any papers, or parts of papers, that in their judgment will not promote the reputation and best interests of this society; and all papers once submitted by their authors for publication, whether read or not read, shall be deemed the property of the society, and shall not be withdrawn except with the consent of the committee.

SEC. 5. It shall be the duty of the committee on admissions, upon receiving the names of the candidates for membership, to make due inquiry and report such as may be found worthy to the society which may thereupon elect them. Should the committee fail to report on nominations submitted to them, any member having made such nomination may renew the same directly to the society, in which case a vote of four-fifths of the members present shall be requisite

Digitized by Google

to constitute an election. All objections to or charges against candidates for membership, made previous to the report of the committee, shall be made in writing and filed with the committee on admissions, said objections or charges becoming the property of said committee and their successors in office.

SEC. 6. It shall be the duty of the nominating committee to nominate candidates for the offices of second, third and fourth vice-presidents, and treasurer, and select the place of meeting; also perform the duties prescribed in Article III, Sections two, three, four, five and six.

ARTICLE IV—DUTIES OF MEMBERS.

SECTION 1. Any resident member vacating his membership shall therefore be divested of any right or title to any portion of the funds or other property of the society.

SEC. 2. (a) Every applicant for membership, not a member of a recognized local medical society, shall present to the secretary his or her application duly signed and recommended by two members in good standing, together with receipts from the treasurer for his or her membership fee and annual dues, which in case of rejection will be returned, and agree to support the constitution and by-laws; nor shall he or she be entitled to the rights of membership until the same is done.

(b) Members of recognized local medical societies may join the state medical society at any time by forwarding to its secretary: First, his or her application endorsed by the secretary or president of his or her local society; second, his or her agreement to support the constitution and by-laws; and third, the membership fee and annual dues for the current year.

SEC. 3. Membership dues shall be three dollars a year and shall be payable annually. The failure of any member to pay such dues for two successive years shall be reported by the secretary of the society; and a failure for three successive years to pay such dues shall also be in a like manner reported, and the membership of such delinquent shall be declared forfeited and lost. Such person may be reinstated to member-

Digitized by Google

ship by following the prescribed course for admission, after payment of previous indebtedness to the treasurer.

ARTICLE V—REGARDING THE DISPOSAL OF PAPERS.

SECTION 1. Papers read before this society, and referred to the committee on publication with instructions to publish, shall be placed in the hands of the secretary at once, or within two weeks, ready for printing; otherwise they will not appear in the society's transactions.

SEC. 2. Any member reading a paper before the society is allowed to have the paper printed in any reputable medical journal under the statement, viz.: "Read before the Michigan State Medical Society," The reading of all papers in sections shall be limited to the maximum of twenty minutes and individual discussions to five minutes.

ARTICLE VI—MISCELLANEOUS.

SECTION 1. These by-laws may be suspended by a two-thirds vote at any regualar meeting, and they may be repealed or amended by a similar vote, notice of the same having been given in writing at any previous meeting.

SEC. 2. As the American Medical Association requires that this society shall endorse all district, county, city, or town medical societies before they can be represented in said Association, in order to receive such endorsement by this society they shall file in the office of the secretary of this society copies of their constitutions, by-laws or resolutions showing that they have adopted the code of ethics of the American Medical Association.

SEC. 3. Rules of order and all questions arising upon the same shall be determined by parliamentary rules and the code of ethics of the American Medical Association.

SEC. 4. At the election of officers of the various sections of this society no member shall be entitled to vote who has not paid his dues for the meeting of the society then in session; nor shall any member be entitled to vote for officers in more than one section at any annual meeting.

Digitized by Google

PRESIDENTS AND VICE-PRESIDENTS.

SINCE THE ORGANIZATION OF THE SOCIETY.

1866.

President—
C. M. STOCKWELL.
Vice-Presidents—
A. PLATT,
J. H. JEROME,
J. H. BEECH,
E. J. BONNIE.

1867.

President—
J. H. JEROME,
Vice-Presidents—
CHAS. SHEPARD,
S. G. ARMOR,
I. H. BARTHOLOMEW,
ALBERT E. LEETE.

1868.

President—
WM. H. DeCAMP,
Vice-Presidents—
J. C. WILSON,
RICHARD INGLIS,
ALANSON CORNELL,
CHAS. T. SOUTHWORTH.

1869.

President—
RICHARD INGLIS.
Vice-Presidents—
CHAS. T. SOUTHWORTH,
A. W. ALVORD,
WM. R. MARSH,
WM. R. BROWNELL.

1870.

President—
I. H. BARTHOLOMEW.
Vice-Presidents—
WM. BRODIE,
MOSES PORTER,
WM. PARMENTER,
H. B. BARNES.

1871.

President—
H. O. HITCHCOCK.
Vice-Presidents—
LENORA FOSTER,
L. W. BLISS,
LEWIS M. FASQUELLE,
B. BARNUM.

1872.

President—
A. B. PALMER.
Vice-Presidents—
JOHN R. WHITE,
WM. PARMENTER,
E. AMSDEN,
JAMES F. NOYES.

1873.

President—
E. W. JENKS.
Vice-Presidents—
E. P. CHRISTIAN,
H. P. LANDON,
L. S. STEVENS,
F. A. RUTHERFORD.

1874.

President—
R. C. KEDZIE.
Vice-Presidents—
J. H. BEECH,
J. ANDREWS,
N. W. WEBBER,
A. B. CHAPIN,

1875.

President—
WM. BRODIE.
Vice-Presidents—
I. A. BROWN,
G. E. FROTHINGHAM,
H. B. SHANK,
C. W. BACKUS.

1876.

President—
ABRAM SAGAR.
Vice-Presidents—
FOSTER PRATT,
EUGENE SMITH,
WM. PARMENTER,
GEORGE K. JOHNSON.

1877.

President—
FOSTER PRATT.
Vice-Presidents—
J. B. WHITE,
T. A. McGRAW,
H. B. BARNES,
T. H. BRIGGS.

1878.

President—
EDWARD COX.
Vice-Presidents—
A. F. WHELAN,
J. R. THOMAS,
G. S. BANKS,
E. B. DUNNING.

1879.

President—
GEORGE K. JOHNSON.
Vice-Presidents—
J. R. THOMAS,
D. O. FARRAND,
WM. F. BREAKEY,
E. S. SNOW.

1880.

President—
J. R. THOMAS.
Vice-Presidents—
E. P. CHRISTIAN,
J. W. HAGADOON,
C. J. LUNDY,
J. H. BENNETT.

Digitized by Google

1881.

President—
J. H. JEROME.
Vice Presidents—
WM. F. BREAKEY,
A. F. KINNE,
S. S. FRENCH,
D. W. C. WADE

1882.

President—
G. W. TOPPING.
Vice-Presidents—
S. S. FRENCH,
HUGH McCOLL,
L. W. BLISS,
A. M. STEVENSON.

1883.

President—
A. F. WHELAN.
Vice-Presidents—
HORACE TUPPER,
L. C. HAMILTON,
H. B. BARNES,
A. KAISER.

1884.

President—
DONALD MACLEAN.
Vice-Presidents—
J. PERKINS,
J. M. COOK,
GORDON CHITTOCK,
CARL BRUMME.

1885.

President—
E. P. CHRISTIAN.
Vice-Presidents—
P. D. PATTERSON,
J. B. GRISWOLD,
J. H. CARSTENS,
A. W. ALVORD.

1886.

President—
CHAS. SHEPARD.
Vice-Presidents—
J. P. STODDARD,
H. O. WALKER,
C. T. NEWKIRK,
H. B. HEMENWAY.

1887.

President—
T. A. McGRAW.
Vice-Presidents—
C. V. TYLER,
W. J. HERDMAN,
G. L. ROSE,
F. J. GRONER.

1888.

President—
S. S. FRENCH.
Vice-Presidents—
C. H. LEWIS,
E. B. WARD,
S. BELKNAP.

1889.

President—
G. E. FROTHINGHAM.
Vice-Presidents—
J. M. SNOOK,
H. F. LYSTER,
E. W. DAVIS,
G. D. CARNES.

1890.

President—
L. W. BLISS.
Vice-Presidents—
H. B. BAKER,
D. E. WELSH,
FLORENCE HUSON,
E. T. TAPPEY.

1891.

President—
GEO. E. RANNEY.
Vice-Presidents—
J. B. GRISWOLD,
A. E. CARRIER,
A. F. HAGADORN,
G. V. VOORHEES.

1892.

President—
CHAS. J. LUNDY.
Vice-Presidents—
G. V. CHAMBERLAIN,
F. A. RUTHERFORD,
BENJ. P. BRODIE,
JOHN L. BURKHART.

1893.

President—
EUGENE BOISE.
Vice-Presidents—
A. H. KIMBALL,
C. T. SOUTHWORTH,
F. A. TOWSLEY,
J. M. COOK.

1894.

President—
HENRY O. WALKER.
Vice-Presidents—
VICTOR C. VAUGHAN,
C. H. WHITE,
MINA LOGUE,
C. H. McKAIN.

1895.

President—
VICTOR C. VAUGHAN.
Vice-Presidents—
HUGH McCOLL,
R. W. ERWIN,
F. B. TIBBALS,
F. G. NOVY.

1896.

President—
HUGH McCOLL.
Vice-Presidents—
C. T. SOUTHWORTH,
A. B. CHAPIN,
DELLA PIERCE,
CARL BONNING.

1897.

President—
JOSEPH B. GRISWOLD.
Vice-Presidents—
ERNEST L. SHURLY,
EUGENE W. DAVIS,
CARL HUBER,
C. B. BURR.

1898.

President—
ERNEST L. SHURLY.
Vice-Presidents—
A. W. ALVORD,
RUSH McNAIR,
D. W. C. WADE,
J. VAN DER LAAN.

1899.

President—
A. W. ALVORD.
Vice-Presidents—
P. D. PATTERSON,
B. D. HARISON,
H. W. LONGYEAR,
J. B. BRADLEY.

Digitized by Google

HONORARY MEMBERS.

1899.

George P. Andrews ..... Honolulu, Hawaiian Islands
N. S. Davis ..... Chicago, Ill.
Joseph Eastman ..... Indianapolis, Ind.
Johann Flintermann ..... Detroit, Mich.
Wm. H. Hingston ..... Montreal, Quebec.
Thomas Hobley ..... Amherstburg, Ont.
Henry M. Hurd ..... Baltimore, Md.
W. W. Jones ..... Toledo, Ohio.
H. M Lyman ..... Chicago, Ill.
Walter H. Moorhouse ..... London, Ont.
James E. Nield ..... Melbourne, Australia.
John H. Ouchterlony ..... Louisville, Ky.
Fred B. Robinson ..... Chicago, Ill.
A. Lapthorn Smith ..... Montreal, Quebec.
H R. Tilton, U. S. A ..... St. Paul, Minn.
Wm. N. Wishard ..... Indianapolis, Ind,
A. P. Drake ..... Hastings, Mich.

CORRESPONDING MEMBERS.

John Boice ..... Denver, Colo.
H. B. Hemenway ..... Evanston, Ill.
Geo. A. Hendricks ..... Minneapolis, Minn.
G. V. Hilton ..... Woodlawn Park, Ill.
J. B. W. Lansing ..... Tenafly, N. J.
A. B. Lyon ..... Honolulu, Hawaiian Islands.
James F. W. Ross ..... Toronto, Ont.
Chas N. Smith ..... Toledo, Ohio.
T. J. Sullivan ..... Chicago, Ill.
Geo. W. Mahoney ..... Chicago, Ill.
W. F. Berry ..... Lafayette, Ind.

Digitized by Google

ACTIVE MEMBERS

OF THE

MICHIGAN STATE MEDICAL SOCIETY.

LIST BY COUNTIES.

1899.

ALGER COUNTY.

Year Joined		Residence
1897	Giawn, F. A.,	*Munising*

ALLEGAN COUNTY.

Year Joined		Residence	Year Joined		Residence
1897	Dreker, J. C ,	*Plainwell*	1893	Rowe, Wm. E.,	*Allegan*
1889	Leighton, N. E.,	*Hopkins St.*	1883	Stuch, L. F.,	"
1884	Nichols, G. B.,	*Martin*	1899	Toan, J. W.,	"

ALPENA COUNTY.

1897	Eakins, James,	*Alpena*

ANTRIM COUNTY.

1890	Johnson, C. A.,	*Mancelona*

ARENAC COUNTY.

1884	Abbott, F. E.,	*Sterling*	1895	Grigg, Arthur,	*Standish*

BARRY COUNTY.

1897	Ferguson, J. P.,	*Middleville*	1886	Lowry, Geo. W.,	*Hastings*
1894	Fuller, D. E.,	*Hastings*	1877	McLeay, D.,	*Prairieville*
1897	Kirk, M. Alice,	"	1897	Parkhurst, L. P.,	*Middleville*
1874	Young, W. H.,	*Nashville*			

Digitized by Google

BAY COUNTY.

Year Joined		Residence	Year Joined		Residence
1895	Baird, T. A.,	*Bay City*	1888	Landon, H. B.,	*Bay City*
1888	Baker, C. H.,	"	1895	McLurg, Jno.,	"
1895	Bristol, Miles C.,	"	1881	Newkirk, C. T.,	"
1891	Caughlin, J. W.,	"	1873	Randall, I. E.,	*W. Bay City*
1881	Erwin, Robt. W.,	"	1894	Ruggles, F. E.,	*Bay City*
1895	Foote, John R.,	"	1881	Stone, D. F.,	"
1890	Granger, Geo. H.,	"	1866	Tupper, Horace,	"
1881	Hagadorn, A. F.,	*W. Bay City*	1895	Williams, Mary A.,	"
1895	Hauxhurst, J. W.,	" "			

BENZIE COUNTY.

1893 Kinne, H. J., *Frankfort*

BERRIEN COUNTY.

1889	Beers, John S.,	*Derby*	1897	Kerry, F.M.,	*Benton Harbor*
1899	Belknap, Fred R.,	*Niles*	1897	Marvin, H. M.,	*Colomo*

1896 Statler, H. O., *Berrien Springs*

BRANCH COUNTY.

1891	Marsh, W. C.,	*Quincy*	1899	Whitmore, H. W.,	*Quincy*
1888	Voorhees, G. V,,	*Coldwater*	1884	Wood, D. H.,	"

CALHOUN COUNTY.

1868	Alvord, A. W.,	*Battle Creek*	1881	Green, Geo. W.,	*Battle Creek*
1898	Barber, C. L.,	*Albion*	1897	Hafford, Geo. C.,	*Albion*
1899	Brown, John C.,	*Burlington*	1898	Haughey, W. H.,	*Battle Creek*
1892	Bryant, Ruth O.,	*Battle Creek*	1882	Kellogg, J. H.,	" "
1892	Clawson, Emma L.,	" "	1878	Lindsay, Kate,	" "
1899	Duggan, D. D.,	" "	1896	Olsen, Alfred B.,	" "
1890	Dunlap, H. M.,	" "	1895	Parmeter, E. L.,	*Albion*
1899	Foote, F. M.,	*Marshall*	1898	Parmeter. R. L.,	"
1877	French, S. S.,	*Battle Creek*	1898	Reed, Jas. H.,	*Battle Creek*
1890	Gillette, Leon M.,	" "	1890	Sands, Theo. E.,	" "
1886	Green, Geo. H.,	*Marshall*	1898	Stewart, Chas. E.,	" "

1886 Thomason, H. D., *Albion*

CASS COUNTY.

1899	Jones, J. H.,	*Dowagiac*	1889	Shillito, Fred'k,	*Marcellus*
1896	Planck, E. A.,	*Union*	1899	Shillito, E.,	"

1889 White, M. P., *Dowagiac*

CHARLEVOIX COUNTY.

1898	Armstrong, R. B.,	*Charlevoix*	1897	Kanagy, L. M.,	*Charlevoix*

CHEBOYGAN COUNTY.

1896	Chapman, W. E.,	*Cheboygan*	1897	Reed, W. F.,	*Cheboygan*

Digitized by Google

CHIPPEWA COUNTY.

Year Joined		Residence	Year Joined		Residence
1897	Harison, B.D.,	*Sault Ste. Marie*	1895	Lang, A. B.,	*Sault Ste. Marie*

CLINTON COUNTY.

1876	Campbell, O. B.,	*Ovid*	1894	Schemer, Ernest,	*Fowler*
1897	Hinkson, J. E.,	*Wacousta*	1890	Swaney, H. N.,	*Engle*
1895	Martin, F. W.,	*Westphalia*	1891	Taylor, J. E.,	*Ovid*
1892	Pollard, Jno. W.,	*St. Johns*	1897	Tuttle, J. L..	*Clinton*
1891	Weller, M.,	*St. Johns*			

CRAWFORD COUNTY.

1896	Insley, S. N.,	*Grayling*	1896	Wolfe, F. E.,	*Grayling*

EATON COUNTY.

1887	Bradley, J. B.,	*Eaton Rapids*	1876	Patterson, P. D.,	*Charlotte*
1894	Carr, H. A.,	" "	1894	Stealey, A. R.,	"
1889	Green, Mary E.,	*Charlotte*	1894	Stimson, C. A.,	*Eaton Rapids*
1899	Mowers, J. H.,	"	1882	Weaver, F. A.,	*Charlotte*
1894	Newark, W. E.,	"	1899	West, A. E.,	*Eaton Rapids*
1894	Wilson, W. E.,	*Grand Ledge*			

EMMETT COUNTY.

1891	Calkins, H. F.,	*Petoskey*	1884	Oven, A. G.,	*Petoskey*
1898	Reycraft, J. J.,	*Petoskey*			

GENESEE COUNTY.

1878	Burr, C. B.,	*Flint*	1896	Niles, H. R.,	*Flint*
1892	Buckham, J. N.,	"	1894	Strangways, W. F ,	"
1895	Callow, F. H.,	*Mt. Morris*	1892	Taylor, P. B.,	*Clio*
1885	Chamberlain, G. V.,	*Flint*	1898	Taylor, W. H.,	"
1890	Gardner, E. D.,	*Davison*	1885	Tibbitts, M. A.,	*Linden*
1892	Laing, J. B.,	*Otisville*	1891	Wheeler, C. S.,	*Flushing*
1897	Wheelock, A. S.,	*Goodrich*			

GLADWIN COUNTY.

1898	Pierce, F. S.,	*Beaverton*	1891	Suylandt, C. G.,	*Gladwin*

GRAND TRAVERSE COUNTY.

1875	Munson, J. D.,	*Traverse City*

GRATIOT COUNTY.

1891	Brainard, I. N.,	*Alma*	1898	Collelmo, U. A. D.,	*Wheeler*
1899	Clark, W. B.,	*St. Louis*	1893	Pettyjohn, E. S.,	*Alma*

HILLSDALE COUNTY.

1890	Moore, Edward E.,	*Hillsdale*	1895	Sawyer, W. H.,	*Hillsdale*

Digitized by Google

HOUGHTON COUNTY.

Year Joined		Residence	Year Joined		Residence
1899	Fischer, A.F.,	*So. Lake Linden*	1897	Joy, H. M.,	*Calumet*
1895	Fletcher, F. E.,	"	1897	Niles, Chas. W.,	"
1898	Pomeroy, E. H.,	*Calumet*			

HURON COUNTY.

1885	McDonald, M. C.,	*Bad Axe*

INGHAM COUNTY.

1870	Baker, Henry B.,	*Lansing*	1873	Hayden, Chas. N.,	*Lansing*
1878	Ballard, L. Anna,	"	1896	Haze, H. A.,	"
1890	Campbell, J. F.,	"	1887	Langford, G.W.,	*Williamston*
1898	Campbell, G. D.,	*Mason*	1878	Park, Jno. B.,	*Okemos*
1882	Collier, J. M.,	*Lansing*	1881	Post, J. A.,	*Lansing*
1894	Culver, S. H.,	*Mason*	1881	Ranney, Geo. E.,	"
1898	Foster, Joseph,	*Lansing*	1894	Shumway, F.W.,	*Williamston*
1890	Greene, John N.,	*Leslie*	1898	Thoms, F. M.,	*Lansing*
1875	Hagadorn, A. D.,	*Lansing*	1894	Turner, F. N.,	*Webberville*
1894	Wilbur, C. L.,	*Lansing*			

IONIA COUNTY.

1895	Alton, R. W.,	*Portland*	1893	Ferguson, J. E.,	*Belding*
1884	Barnes, W. L.,	*Ionia*	1897	Horner, B. F.,	*Lake Odessa*
1888	Cope, C. S.,	"	1897	Stanton, G. A.,	*Belding*
1873	Dellenbaugh, C. C.,	*Portland*	1890	Strahan, D. H.,	*Pewamo*

IOSCO COUNTY.

1899	Thompson, F. C.,	*East Tawas*

JACKSON COUNTY.

1891	Bulson, A. E.,	*Jackson*	1876	Main, J. T.,	*Jackson*
1884	Chivers, W. H.,	"	1886	Porter, J. A.,	*Brooklyn*
1897	Colby, C. D. W.,	"	1897	Robinson, D. E.,	*Jackson*
1895	Hubbard, C. D.,	*Parma*	1896	Roberts, A. J.,	"
1876	Lewis, C. H.,	*Jackson*	1883	Williams, N. H.,	"

KALAMAZOO COUNTY.

1899	Ames, Edward,	*Kalamazoo*	1883	Osborne, H. B.,	*Kalamazoo*
1889	Bosman, J. Will,	"	1887	Ostrander, H.,	"
1897	Clark, O. H.,	"	1892	Pierce, Della P.,	"
1899	Coller, F. S.,	*Vicksburg*	1899	Rockwell, A. H.,	"
1898	Crane, A. W.,	*Kalamazoo*	1897	Sayles, Perry,	"
1889	Edwards, W. M.,	"	1880	Schaberg, H. H.,	"
1899	Fernandez, L. P.,	"	1883	Snook, J. M.,	"
1890	LaCrone, O. A.,	"	1899	Stone, W. A.,	"
1883	McKain, C. H.,	*Vicksburg*	1872	Van Deusen, E. H.,	"
1899	McKibben, J. H.,	*Kalamazoo*	1888	VanZwaluwenburg. C.,	"
1890	McNair, Rush,	"	1899	Wilbur, C. T.,	"
1899	Wilbur, E. P.,	*Kalamazoo*			

Digitized by Google

KALKASKA COUNTY.

1891 Babcock, E. B., *Kalkaska*

KENT COUNTY.

Year Joined		Residence
1880	Albright, Jos.,	*Grand Rapids*
1898	Annes, C. J.,	*Sand Lake*
1890	Best, L. E.,	*Grand Rapids*
1888	Bigham, Earl.	"
1880	Boise, Eugene,	"
1890	Boot, T. A.,	"
1893	Brady, John,	"
1897	Brown, F. H.,	"
1890	Burkhart, J. L.,	"
1890	Burwell, A. G.,	*Byron Center*
1897	Bull, C. H.,	*Grand Rapids*
1884	Catlin, H. W.,	"
1884	Chadwick, H. J.,	"
1890	Dales, O. L.,	"
1897	DeKraker, J. M,	"
1890	DeVore, Jas. A.,	"
1897	DeWar, J.B.,	*Cedar Sprinsgs*
1897	Droste, C.M,	*Grand Rapids*
1890	Earle, Bessie,	"
1880	Fuller, William,	"
1888	Graves, S. C.,	"
1898	Graybiel, A. G.,	*Caledonia*
1887	Greene, D M.,	*Grand Rapids*
1892	Greene, M. C.,	*Lowell*
1890	Griswold, J. B.,	*Gr'd Rapids*
1884	Groner, F. J.,	"
1883	Hake, Wm, F,	"
1889	Hazelwood, A.,	"
1897	Hilliker, J. B.,	*Gr'd Rapids*
1897	Hooker, Chas. E.,	"
1897	Hyser, Wm.,	*Austerlitz*
1899	Irwin, T. C.,	*Grand Rapids*
1872	Johnson, Geo. K.,	"
1890	Johnston, Collins H.,	"
1894	Kelly, C. M.,	"
1893	King, H. M.,	"
1883	Kirkland, R. J,	"
1890	McColl, J. A.,	.
1890	McPherson, J. A.,	"
1893	Patterson, A. J.,	"
1884	Pyle, Benj.,	"
1897	Read, L. C.,	"
1898	Riecke, J. W.,	"
1897	Rogers, Jno. R.,	"
1888	Roller, L. A.,	"
1897	Rozema, S. L.,	"
1889	Rutherford, F. A.,	"
1880	Schurtz, Perry,	"
1895	Smith, Mary C.,	"
1898	Smith, R. R.,	"
1890	Spencer, R. H.,	"
1890	Wanty, Emma N.,	"
1886	Welsh, D. E.,	"
1895	Whinery, J. B.,	"
1890	Wisse, I,	"
1897	Young, W. G.,	"

LAPEER COUNTY.

1897	Burley, D. H.,	*Almont*
1896	Conley, Ed.,	*Columbiaville*
1895	Jones, Geo. W.,	*Imlay City*
1873	McColl, Hugh,	*Lapeer*
1895	Price, Adam,	*Almont*
1895	Stewart, Peter,	*Hadley*
1895	Stone, Geo W.,	*Metamora*
1892	Taylor, J. H.,	*Lapeer*
1896	Tinker, F. A.,	"
1895	Yerex, D. V.	*Imlay City*

LENAWEE COUNTY.

1895	Dodge, J. R.,	*Hudson*
1876	Howell, Geo.,	*Tecumseh*
1887	Jenkins, J. F.,	"
1899	Jewett, Wm. E.,	*Adrian*
1899	Kirkpatrick, C.,	*Adrian*
1883	Morden, W. S,	*Macon*
1878	North, L. G.,	*Tecumseh*
1897	Town, L. S,	*Geneva*

Digitized by Google

LIVINGSTON COUNTY.

Year Joined		Residence	Year Joined		Residence
1888	Austin, A. S.,	*Fowlerville*	1898	McHench. W. J.,	*Brighton*
1898	Browne, J. E.,	*Howell*	1878	Sigler, H. F.,	*Pinckney*

LUCE COUNTY.

1899 Chamberlain, Geo. L., *Newberry*

MACKINAC COUNTY.

1897	Bogan, J. H.,	*Mackinac Island*	1888	Grenier, Theo ,	*Gould City*

MACOMB COUNTY.

1889	Berry, W. F.,	*Mt. Clemens*	1885	Moore, M. T.,	*Richmond*
1888	Berry, H. G.,	*Romeo*	1899	Parkin, R. L ,	*Romeo*
1896	Burdon, F. L.,	*New Baltimore*	1896	Robertson, G. G.,	*Utica*
1888	Chapin, A. B.,	*Mt. Clemens*	1897	Shipman, G. W.,	*Armada*
1896	Croman, J. M.,	"	1886	Shotwell, A. N.,	*Mt. Clemens*
1896	Gibson, Jas. C.,	*New Haven*	1889	Taylor, H. F.,	"
1889	Greenshields, Wm ,	*Romeo*	1896	Wilson, W. D.,	"
1896	Gunn, Alexander,	*New Haven*	1882	Yates, Albert,	*Washington*
1888	Knight, P. A..	*Utica*	1885	Yates, J.,	*Roseville*

MANISTEE COUNTY.

1896	Jensen, P. C.,	*Manistee*	1897	King, Jas. A.,	*Manistee*

MARQUETTE COUNTY.

1895	Felch, Theo.,	*Ishpeming*	1897	Loveland, H. H.,	*Michigamme*

MASON COUNTY.

1889	Crosby, G. W.,	*Ludington*	1899	Graham, F. W.,	*Ludington*

MECOSTA COUNTY.

1891	Dodge, Wm. T.,	*Big Rapids*	1890	Griswold, L. S.,	*Big Rapids*
1891	Snyder, Jno.,	*Mecosta*			

MIDLAND COUNTY.

1883 Towsley, F. A., *Midland*

MISSAUKEE COUNTY.

1896	Brown, G. V.,	*McBain*	1894	Decker, Jno. W.,	*Lake City*

MONROE COUNTY.

1895	Knapp, L. C ,	*Monroe*	1887	Southworth, C. T.,	*Monroe*
1890	Root, P. S.,	"	1898	Valade, J. J.,	*Newport*

MONTCALM COUNTY.

1896	Black, D. K.,	*Montcalm*	1893	Morgan, C. F.,	*Greeneille*
1894	Blanchard, F. R.,	*Lakeview*	1898	Nelson. Gustave,	*Trufant*
1897	Bower, H. L.,	*Greenville*	1894	Sanderson, J. H.,	*Edmore*
1893	Gambler, W. P.,	*Stanton*			

Digitized by Google

MUSKEGON COUNTY.

Year Joined		Residence	Year Joined		Residence
1884	Denslow, J. F.,	*Muskegon*	1883	Vander Laan, J.,	*Muskegon*
1890	Garber, F. W.,	"	1886	Williams, G. S.,	"
1897	Koon, T. M.,	*Casnovia*			

OAKLAND COUNTY.

1899	Bird, W. G.,	*Milford*	1896	Johnston, Rob't,	*Milford*
1896	Brownell, W. S.,	*Rochester*	1884	Lathrop, H. K.,	*Royal Oak*
1899	Chapin, C. B.,	*Pontiac*	1873	LeBaron, R.,	*Pontiac*
1885	Chapman, E. A ,	*Walled Lake*	1898	McDonald, T. E.,	*Holly*
1892	Chapman, H. S.,	*Pontiac*	1890	Manly, Ora,	*Davisburg*
1885	Christian, E. A.,	"	1892	Morse, Jason,	*Pontiac*
1898	Felshaw, C. P.,	*Holly*	1893	Neff, I. H.,	"
1891	Galbraith, F. B.,	*Pontiac*	1891	Riker, Jno. D.,	"
1891	Gray, M. W.,	"	1895	Sutherland, C. J.,	*Clarkston*
1892	Guillot, H. C.,	"	1875	Wade, D. W. C.,	*Holly*
1889	Hunter, G. F.,	*Holly*	1881	Wilson, J. E.,	*Rochester*

OGEMAW COUNTY.

1890 Flynn, E. H., *West Branch*

ONTONAGON COUNTY.

1896 Gates, W. C., *Rockland*

OSCEOLA COUNTY.

1897	Johnson, Donald,	*Marion*	1895	Swanton, L.,	*Reed City*

OTTAWA COUNTY.

1884	Baert, Daniel,	*Zeeland*	1884	Huizinga, Thos. G.,	*Zeeland*
1898	Cook, D. G.,	*Holland*	1886	Kremers, Henry,	*Holland*
1897	DeSpedler, E.,	*Drenthe*	1877	Walkley, W.S.,	*Grand Haven*
1890	Godfrey, Byron B.,	*Holland*	1896	Yates, O. E.,	*Holland*

SAGINAW COUNTY.

1895	Bailey, A. L.,	*Chesaning*	1891	Ellis, C. W.,	*Saginaw*
1890	Barber, O. P.,	*Saginaw*	1884	Florentine, F.B.,	*E. Saginaw*
1879	Bliss, L. W.,	"	1885	Goodman, C.W.T.,	*Saginau*
1897	Bliss, J. W.,	"	1884	Kitchen, Sam'l,	*E. Saginaw*
1891	Bradt, Chas. M.,	*St. Charles*	1891	McCormick, J. C.,	*Saginaw*
1892	Brooks, H V. Bills,	*Saginaw*	1894	McLaren, J. L.,	"
1899	Carman, R. A.,	"	1890	Ostrom, S. C, J.,	"
1891	Connery, W. S.,	"	1891	Rouse, J. S.,	"
1891	Cornell, D. B ,	"	1892	Rowe, B, B ,	"
1897	Curtis, E. E.,	"	1891	Sample, C. H.,	"
1886	Davis, Eugene,	"	1887	Small, S. G.,	
1896	Dibble, Wealthy,	"	1881	Williams, H.,	*E. Saginaw*
1891	Edelman, F. W.,	"	1896	Williamson, T. M.,	*Saginaw*

Digitized by Google

SANILAC COUNTY.

1896 Banting, W. T., *Lexington*

SCHOOLCRAFT COUNTY.

1899 Patterson, E. B., *Manistique*

SHIAWASSEE COUNTY.

Year Joined		Residence	Year Joined		Residence
1879	Chronch, G. W.,	*Shaftsburg*	1894	Lamb, D. H.,	*Owosso*
1898	Cochran, C, F.,	*Durand*	1895	McCormick, C.,	"
1892	Cowles, A. G.,	"	1887	Phippen, S. S. C.,	"
1897	Goodspeed, J. M.,	*Bancroft*	1897	Shickle. Chas.,	*Bennington*
1886	Hume, A. M.,	*Owosso*	1869	Ward, E. B.,	*Laingsburg*
1885	Hume, W. C.,	*Corunna*			

ST. CLAIR COUNTY.

1896	Abbott, A. J.	*Emmett*	1896	Schoales, W. L.,	*St. Clair*
1896	Baird, Robt. T.,	*Marine City*	1899	Smith, S. K.,	*Port Huron*
1881	Burtless, W. E.,	*St. Clair*	1899	Stewart, O.,	"
1896	Farrand, E. M.,	*Port Huron*	1885	Stockwell, C. B.,	"
1896	Howard, S.A.,	*Upton Works*	1898	Thompson, A. C.,	*St. Clair*
1896	Inches, J. W.,	*St. Clair*	1885	Todd, Geo. W.,	*Jeddo*
1884	Platt, Joseph S.,	*Port Huron*	1885	Willson, M.,	*Port Huron*

ST. JOSEPH COUNTY.

1897	Bacon, M. L.,	*Colon*	1894	Robinson, F. W.,	*Sturgis*
1899	Nihart, G. W.,	*Mendon*	1899	Scidmore, A. W,	*Three Rivers*

TUSCOLA COUNTY.

1895	Garvin, W. C.,	*Millington*	1885	Seeley, A. L.,	*Mayville*
1898	Handy, J. E.,	*Watrousville*	1891	Wright, W. C.,	*Unionville*
1895	Livingston, P. J.,	*Caro*			

VAN BUREN COUNTY.

1888	Carnes, Geo. D.,	*South Haven*	1899	Ransom, F.H.,	*Bloomingdale*
1897	Cronin, M. C.,	*Bangor*	1899	Rhodes, L. G.,	*South Haven*
1890	Engle, W. A.,	*Hartford*	1896	Stevens, Sam'l,	*Keeler*
1899	Ferguson, J. E.,	*Bangor*	1889	Vaughan, O. M.,	*Covert*
1889	Lawrence, R. R.,	*Hartford*			

WASHTENAW COUNTY.

1876	Breakey, Wm. F.,	*Ann Arbor*	1888	Dorrance, W. H.,	*Ann Arbor*
1895	Breakey, J. F.,	" "	1875	Georg, Conrad,	" "
1885	Carrow, Flemming,	" "	1876	Herdman, W. J.,	" "
1894	Cushny, Arthur,	" "	1888	Huber, G. C.,	" "
1884	Darling, C. G.,	" "	1896	Hueston, Jas.,	*Ypsilanti*
1892	Dock, Geo.,	" "	1894	Hull, G. M.,	"

Digitized by Google

WASHTENAW COUNTY—Continued.

Year Joined		Residence
1890	Keating, J. W.,	*Ann Arbor*
1895	Klingman, T.,	" "
1893	Lombard, W. P.,	" "
1892	Lynds, J. G.,	" "
1888	Martin, J. N.,	" "
1890	Nancrede, C. B.,	" "
1894	Novy, F. G.,	" "
1873	Owen, F. K.,	*Ypsilanti*
1888	Palmer, Geo. W.,	*Chelsea*
1888	Prescott, A. B.,	*Ann Arbor*
1892	Rogers, A. S.,	" "
1894	Solis, J. C.,	" "
1879	Vaughan, V. C.,	" "
1886	Wessinger, J. A.,	" "
1896	Warthin, A. S.,	" "

WAYNE COUNTY.

1897	Aaron, C. D.,	*Detroit*
1899	Amburg, Emil,	"
1892	Anderson, W. S.,	"
1899	Anderson, Christian,	"
1891	Armstrong, O. S.,	"
1873	Banks, Gertrude S.	"
1898	Beisman, Joseph,	"
1885	Bell, Sam'l,	"
1888	Bigg, A. H.,	"
1888	Bonning, Carl,	"
1868	Book, J. B.,	"
1888	Brady, M.,	"
1885	Brodie, Benj., P.,	"
1897	Brown, N. F.,	"
1891	Bryan, Alonzo,	"
1897	Burgess, J. M.,	*Northville*
1897	Cahalan, Jas.,	*Wyandotte*
1888	Campbell, D. M.,	*Detroit*
1886	Campbell, D. S.,	"
1888	Carrier, A. E.,	"
1873	Carstens, J. H.,	"
1888	Chapoton, E. A.,	"
1885	Chittick, W. R.,	"
1885	Clark, J. E.,	"
1875	Cleland, H. A.,	"
1898	Clippert, F. J.,	*Delray*
1890	Collins, A. N.,	*Detroit*
1872	Connor, Leartus,	"
1894	Cook, Emma D.,	"
1898	Cook, Henry H.,	"
1888	Cree, W. J.,	"
1898	Cummings, R. B.,	*Wayne*
1887	Deuel, Elizabeth L.,	*Detroit*
1896	Dewey, F. N.,	*Plymouth*
1884	Donovan, D. O.,	*Detroit*
1887	Douglas, Chas.,	*Detroit*
1885	Duffield, Geo.,	"
1867	Duffield, Sam'l P.,	"
1882	Emerson, J. E.,	"
1897	Finch, C. L.,	"
1884	Frank, Chas. P.,	"
1885	Frothingham, Geo. E.,	"
1893	Frothingham, G. E. Jr.,	"
1888	Gibbes, Heneage,	"
1892	Gilman, R. W.,	"
1898	Gunsolus, Kenneth,	"
1894	Hartz, H. J.,	"
1898	Hickey, P. M.,	"
1888	Hitchcock, C. W.,	"
1898	Holmes, A. D.,	"
1895	Houghton, E. M.,	"
1884	Hoyt, B. R.,	"
1889	Huson, Florence,	"
1888	Imrie, A. W.,	"
1885	Inglis, David,	"
1894	Ives, A. W.,	"
1895	Jenks, Edward W.,	"
1898	Jenks, H. D.,	"
1882	Jennings, C. G.	"
1885	Jones, Jno. R.,	"
1888	Judson, H. C.,	"
1869	Kiefer, Herman,	"
1884	Kirker, Geo. A.,	"
1896	Knill, E. G.,	"
1888	LeFerte, Daniel,	"
1888	Lau, O. H.,	"
1890	Lee, John,	"
1894	Lennox, L. J.,	"
1881	Leonard, C. Henri,	"
1888	Longyear, H. W.,	"

Digitized by Google

WAYNE COUNTY—CONTINUED.

Year Joined		Residence	Year Joined		Residence
1895	McClintock, C. T.,	*Detroit*	1898	Scherer, Otto,	*Detroit*
1866	McGraw, T. A.,	"	1886	Sherrill, E. S.,	"
1892	McLean, A.,	"	1875	Shurly, E. L.,	"
1896	McMillan, J. A.,	"	1897	Shurly, B. R.,	"
1875	Maclean, Donald,	"	1872	Smith, Eugene,	"
1896	Maass, F.,	"	1892	Smith, E, B.,	"
1898	Mabee, J. I ,	*Rockwood*	1888	Stevens, W. C.,	"
1888	Maire. L. E.,	*Detroit*	1888	Summers, F. D.,	"
1887	Mann, F. W.,	"	1888	Tappey, E. T.,	"
1884	Manton, W. P.,	"	1894	Tibbals, F. B.,	"
1896	Marker, J. J.,	*Eloise*	1892	Troy, E. H.,	"
1890	Metcalf, Wm. F.,	*Detroit*	1894	Walker, F. B.,	"
1887	Miner, S. G.,	"	1867	Walker, H. O.,	"
1875	Mulheron, J. J.,	"	1897	Walker, T. H.,	"
1894	Murdock, T. S.,	*Northville*	1892	Warren, W.,	"
1893	O'Dell, R. W.,	*Detroit*	1869	Webber, N. W.,	"
1885	Parker, D. L.,	"	1896	White, J. V.,	"
1895	Parker, Walter R.,	"	1895	Winter, J. A.,	"
1892	Reynaud, Geo. L.,	"	1879	Wyman, H. C.,	"
1888	Robbins, F. W.,	"	1898	Yarbrough, Chas. C.,	"
1898	Safford, H. E.,	"	1898	Yates, H. W.,	"
1895	Schell, L. E ,	"	1896	Zimmerman, S.,	*Wayne*

WEXFORD COUNTY.

1890	McMullen. B. H.,	*Cadillac*	1895	Miller, C. E.,	*Cadillac*
	1897	Ralston, David,		*Cadillac*	

Digitized by Google

Alphabetical List of Active Members.

1899.

NAMES AND RESIDENCES.

Abbott, F. E.....Sterling
Abbott, A. J.....Albion
Aaron, C. D.....Detroit
Albright. Joseph.....Grand Rapids
Alvord, A. W.....Battle Creek
Alton, R. W.....Portland
Amberg, Emil.....Detroit
Ames, Edward.....Kalamazoo
Anderson, W. S.....Detroit
Anderson, Christine.....Detroit
Annes, C. J.....Sand Lake
Armstrong, O. S.....Detroit
Armstrong, R. D.....Charlevoix
Austin, A. S.....Fowlerville
Babcock, E. B.....Kalkaska
Bacon, M. L.....Colon
Baert, Daniel.....Zeeland
Baird, Thos. A.....Bay City
Bailey, A. L.....Chesaning
Baker, C. H.....Bay City
Baker, H. B.....Lansing
Baird, Robert B.....Marine City
Ballard, L. Anna.....Lansing
Banks, Gertrude S.....Detroit
Banting, W. J.....Lexington
Barnes, W. L.....Ionia
Barber, O. P.....Saginaw
Barber, C. L.....Albion
Beers, John S.....Derby
Beisman, Joseph.....Detroit
Belknap, Fred R.....Niles
Bell, Samuel.....Detroit
Berry, W. F.....Mt. Clemens
Berry, H. G.....Romeo
Best, L. E.....Grand Rapids
Bigg, A. H.....Detroit
Biddle, A. P.....Detroit
Bigham, Earl.....Grand Rapids
Bird, W. G.....Milford
Black, D. K.....Montcalm
Blanchard, F. R.....Lakeview
Bliss, L. W.....Saginaw
Bliss, J. W.....Saginaw
Bogan, J. H.....Mackinac Island
Boise, Eugene.....Grand Rapids
Bonning, Carl.....Detroit
Bower, H. L.....Greenville
Book, J. B.....Detroit
Boot, T. A.....Grand Rapids
Bosman, J. Will.....Kalamazoo
Brady, John.....Grand Rapids
Bradley, J. B.....Eaton Rapids
Bradt, Chas. M.....St. Charles
Brady, Matthew.....Detroit
Brainard, I. N.....Alma
Breakey, Wm. F.....Ann Arbor
Breakey, Jas. F.....Ann Arbor
Brodie, Benj. P.....Detroit
Brooks, H. V. Bills.....Saginaw
Brown, G. V.....McBain

NAMES AND RESIDENCES.

Browne, J. E.....Howell
Brown, F. H.....Grand Rapids
Brown, John C.....Burlington
Brown, N. F.....Detroit
Brownell, W. S.....Rochester
Bryan, Alonzo.....Detroit
Bryant, Ruth O.....Battle Creek
Burkhart, J. L.....Grand Rapids
Burr, C. B.....Flint
Burtless, W. E.....St. Clair
Bulson, A. E.....Jackson
Burwell, A. G.....Byron Center
Buckham, J. N.....Flint
Burdon, F. L.....New Baltimore
Burgess, J. M.....Northville
Bull, C. H.....Grand Rapids
Burley, D. H.....Almont
Cahalan, James.....Wyandotte
Callow, F. H.....Mt Morris
Calkins, H. T.....Petoskey
Campbell, J. F.....Lansing
Campbell, D. M.....Detroit
Campbell, D. S.....Detroit
Campbell, G. D.....Mason
Campbell, O. B.....Ovid
Carnes, G. D.....South Haven
Carman, R. A.....Saginaw
Carr, Henrietta A.....Eaton Rapids
Carrier, Albert E.....Detroit
Carrow, Flemming.....Ann Arbor
Carstens, J. H.....Detroit
Catlin, H. W.....Grand Rapids
Chadwick, H. J.....Grand Rapids
Chamberlain, Geo. L.....Newberry
Chamberlain, G. V.....Flint
Chapin, A. B.....Mt. Clemens
Chapin, Claudius B.....Pontiac
Chapman, W. E.....Cheboygan
Chapman, E. A.....Walled Lake
Chapman, H. S.....Pontiac
Chapoton, E. A.....Detroit
Chittick, W. R.....Detroit
Chivers, W. H.....Jackson
Christian, E. A.....Pontiac
Chronch, Geo. W.....Shaftsburg
Clark, J. E.....Detroit
Clark, O. H.....Kalamazoo
Clark, W. B.....St. Louis
Clawson, Emma L.....Battle Creek
Cleland, H. A.....Detroit
Clippert, F. J.....Delray
Colby, C. D. W.....Jackson
Coughlin, J. W.....Bay City
Colelmo, U. A. D.....Wheeler
Collier, J. M.....Lansing
Collins, A. N.....Detroit
Conley, Edmund.....Columbiaville
Connor, Leartus.....Detroit
Connery, Wm. S.....Saginaw
Cook, Emma D.....Detroit

Digitized by Google

NAMES AND RESIDENCES.

Cook, D. G.....Holland
Cook, Henry H.....Detroit
Coller, F. S.....Vicksburg
Cope, C. S.....Ionia
Cornell, D. B.....Saginaw
Cowles, A. G.....Durand
Crane, A. W.....Kalamazoo
Cree, W. J.....Detroit
Croman, J. M.....Mt. Clemens
Crosby, Geo. W.....Ludington
Culver, S. H.....Mason
Cummings, Rich'd B.....Wayne
Curtis, E. E.....Saginaw
Cushny, Arthur.....Ann Arbor
Dales, O. L.....Grand Rapids
Darling, C. G.....Ann Arbor
Davis, E. W.....Saginaw
Decker, J. W.....Lake City
DeKraker, J. M.....Grand Rapids
Dellenbaugh, C C.....Portland
Denslow, J. F.....Muskegon
DeSpelder, E.....Drenthe
Deuel, E. L.....Detroit
DeVore, Jas. A.....Grand Rapids
DeWar, J. B.....Cedar Springs
Dewey, F. N.....Plymouth
Dibble, Wealthy.....Saginaw
Dock, Geo.....Ann Arbor
Dodge, W. T.....Big Rapids
Dodge, J. R.....Hudson
Donovan, D. O.....Detroit
Dorrance, W. H.....Ann Arbor
Douglas, Chas.....Detroit
Dreker, J. C.....Plainwell
Droste, C. M.....Grand Rapids
Duffield, Geo.....Detroit
Duffield, Sam'l P.....Detroit
Duggan, D. D.....Battle Creek
Dunlap, H. M.....Battle Creek
Earle, Elizabeth.....Grand Rapids
Eakins, Jas.....Alpena
Edelmann, F. W.....Saginaw
Edwards, W. M.....Kalamazoo
Ellis, C. W.....Saginaw
Emerson, J. E.....Detroit
Engle, W. A.....Hartford
Erwin, Robt. W.....Bay City
Farrand, E. M.....Port Huron
Felch, Theo. A.....Ishpeming
Felshaw, C. P.....Holly
Ferguson, J. E.....Bangor
Ferguson, J. E.....Belding
Ferguson, Jno. P.....Middleville
Fernandez, L. P.....Kalamazoo
Finch, C. L.....Detroit
Fischer, A. F.....So. Lake Linden
Fletcher, F. E.....Lake Linden
Florentine, F. B.....E. Saginaw
Foote, F. M.....Marshall
Foster, Joseph.....Lansing
Flynn, E. H.....West Branch
Frank, Chas. P.....Detroit
French, S. S.....Battle Creek
Frothingham, Geo. E.....Detroit
Frothingham, Geo. E., Jr.....Detroit
Fuller, D. E.....Hastings
Fuller, William.....Grand Rapids
Galbraith, F. B.....Pontiac
Garber, Frank W.....Muskegon
Gardner, Elmer D.....Davison
Gamber, W. P.....Stanton
Garvin, W. C.....Millington
Gates, W. C.....Ontonagon
Georg, Conrad.....Ann Arbor
Gibbes, Heneage.....Detroit
Gibson, Jas. C.....New Haven
Gillette, Leon M.....Battle Creek

NAMES AND RESIDENCES.

Gillman, R. W.....Detroit
Goodspeed, J. M.....Bancroft
Godfrey, Byron B.....Holland
Goodman, C. W. T.....Saginaw
Graham, F. W.....Ludington
Granger, Geo. H.....Bay City
Graves, S. C.....Grand Rapids
Grawn, F. A.....Munising
Gray, M. W.....Pontiac
Graybiel, A. G.....Caledonia
Greene, D. Milton.....Grand Rapids
Greene, Jno. N.....Leslie
Green, M. C.....Lowell
Greene, Geo. H.....Marshall
Green, Geo. W.....Battle Creek
Greene, Mary E.....Charlotte
Greenshields, Wm.....Romeo
Grenier, Theophilus.....Gould City
Grigg, Arthur.....Standish
Griswold, L. S.....Big Rapids
Griswold, J. B.....Grand Rapids
Groner, F. J.....Grand Rapids
Guillot. H. C.....Pontiac
Gunn, Alex.....New Haven
Gunsolus, Kenneth.....Detroit
Hafford, Geo. C.....Albion
Hagadorn, A. D.....Lansing
Hagadorn, A. F.....W. Bay City
Hake, Wm. F.....Grand Rapids
Handy, J. E.....Watrousville
Harison, B. D.....Sault Ste. Marie
Hartz, H. J.....Detroit
Haughey, W. H.....Battle Creek
Hauxhurst, J. W.....W. Bay City
Hayden, Chas. N.....Lansing
Haze, H. A.....Lansing
Hazelwood, Arthur.....Grand Rapids
Herdman, W. J.....Ann Arbor
Hickey, P. M.....Detroit
Hilliker, J. B.....Grand Rapids
Hinkson, J. E.....Wacousta
Hitchcock, C. W.....Detroit
Holmes, A. D.....Detroit
Hooker, Chas. E.....Grand Rapids
Horner, B. F.....Lake Odessa
Houghton, E. M.....Detroit
Howard, S. A.....Upton Works
Howell, Geo.....Tecumseh
Hoyt, B. R.....Detroit
Hubbard, C. D.....Parma
Huber, G. C.....Ann Arbor
Huizinga, T. G.....Zeeland
Hueston, Jas.....Ypsilanti
Hull, G. M.....Ypsilanti
Hume, A. M.....Owosso
Hume, W. C.....Corunna
Hunter, O. F.....Holly
Huson, Florence.....Detroit
Hyser, William.....Austerlitz
Imrie, A. W.....Detroit
Inches, J. W.....St. Clair
Inglis, David.....Detroit
Insley, S. N.....Grayling
Irwin, Thos. C.....Grand Rapids
Ives, A. W.....Detroit
Jenkins, J. F.....Tecumseh
Jenks, E. W.....Detroit
Jenks, H. D.....Detroit
Jennings, C. G.....Detroit
Jensen, Paul C.....Manistee
Jewett, William E.....Adrian
Johnson, Donald.....Marion
Johnson, Geo. K.....Grand Rapids
Johnson, C. A.....Mancelona
Johnston. Collins H.....Grand Rapids
Johnston, Robt.....Milford
Jones, Geo. W.....Imlay City

Digitized by Google

NAMES AND RESIDENCES.

Jones, John H.....Dowagiac
Jones, Jno. R.....Detroit
Joy, Henry M.....Calumet
Judson, H. C.....Detroit
Kanagy, L. M.....Charlevoix
Keating, J. W.....Ann Arbor
Kellogg, J. H.....Battle Creek
Kelly, C. M.....Grand Rapids
Kerry, F. M.....Benton Harbor
Keifer, Hermann.....Detroit
King, Jas. A.....Manistee
King, Herbert Maxon.....Grand Rapids
Kinne, H. J.....Frankfort
Kirk, M. Alice.....Hastings
Kirker, G. A.....Detroit
Kirkland, R. J.....Grand Rapids
Kirkpatick, C.....Adrian
Kitchen, Sam'l.....E. Saginaw
Klingman, T.....Ann Arbor
Knapp, L. C.....Monroe
Knight, P. A.....Utica
Knill, E. G.....Detroit
Koon, T. M.....Casnovia
Kremers, H.....Holland
LaCrone, O A.....Kalamazoo
LaFerte, Daniel.....Detroit
Laing, J. B.....Otisville
Lamb, D. H.....Owosso
Landon, H. B.....Bay City
Lang, A. B.....Sault Ste. Marie
Langford, Geo. W.....Williamston
Lathrop, H. K.....Royal Oak
Lau, O. H.....Detroit
Lawrence, Robt. R.....Hartford
LeBaron, R.....Pontiac
Lee, John.....Detroit
Lennox, L. J.....Detroit
Leighton, N. E.....Hopkins Station
Leonard, C. Henri.....Detroit
Lewis, C. H.....Jackson
Lindsay, Kate.....Battle Creek
Livingstone, P. J.....Caro
Lombard, W. P.....Ann Arbor
Longyear, H. W.....Detroit
Loveland, H. H.....Michigamme
Lowry, G. W.....Hastings
Lynds, J. G.....Ann Arbor
McCormick, J. C.....Saginaw
McColl, Hugh.....Lapeer
McColl, John A.....Grand Rapids
McDonald, T. E.....Holly
McDonnel, M. C.....Bad Axe
McClintock, C. T.....Detroit
McCormick, C.....Owosso
McGraw, T. A.....Detroit
McHench, W. J.....Brighton
McKain, C. H.....Vicksburg
McKibben, J. H.....Kalamazoo
McLaren, J. L.....Saginaw
McLean, Angus.....Detroit
McLeay, D.....Prairieville
McLurg, John.....Bay City
McMullen, B. H.....Cadillac
McMillan, J. A.....Detroit
McNair, Rush.....Kalamazoo
McPherson, Jas. A.....Grand Rapids
Maclean, Donald.....Detroit
Maass, F.....Detroit
Mabee, J. I.....Rockwood
Main, J. T.....Jackson
Maire, L. E.....Detroit
Manley, Ora.....Davisburg
Mann, F. W.....Detroit
Manton, W. P.....Detroit
Marsh, Wm. C.....Quincy
Martin, J. N.....Ann Arbor
Martin, F. W.....Westphalia

NAMES AND RESIDENCES.

Marker, J. J.....Eloise
Marvin, H. M.....Coloma
Metcalf. Wm. F.....Detroit
Miller, Carroll E.....Cadillac
Miner, S. G.....Detroit
Moore, M. T.....Richmond
Morden, W. S.....Macon
Morgan, C. T.....Greenville
Morse, Jason.....Pontiac
Mowers, J. H.....Charlotte
Mulheron, J. J.....Detroit
Munson, J. D.....Traverse City
Murdock, T. S.....Northville
Nancrede, C. B.....Ann Arbor
Neff. I. H.....Pontiac
Nelson, Gustave.....Trufant
Newark W. E.....Charlotte
Newkirk, C. T.....Bay City
Nichols, G. B.....Martin
Nihart, G. W.....Mendon
Niles, H. R.....Flint
Niles, Chas. W.....Calumet
North, L. G.....Tecumseh
Novy, F. G.....Ann Arbor
O'Dell, R. W.....Detroit
Olsen, Alfred B.....Battle Creek
Osborne, H. B.....Kalamazoo
Ostrander, H.....Kalamazoo
Ostrom, S. C. J.....Saginaw
Oven, A. G.....Petoskey
Owen, F. K.....Ypsilanti
Palmer Geo. W.....Chelsea
Park, John B.....Okemos
Parker, D L.....Detroit
Parker, Walter R.....Detroit
Parkin, Robt. L.....Romeo
Parkhurst, L P.....Midddleville
Parmeter, E. L.....Albion
Parmeter, R. L.....Albion
Patterson, A. J.....Grand Rapids
Patterson, E. B.....Manistique
Patterson, P. D.....Charlotte
Pettyjohn, E. S.....Alma
Phippen, S. S. C.....Owosso
Pierce, Della P.....Kalamazoo
Pierce, Frank S.....Beaverton
Planck, E. A.....Union
Platt, Jos. S.....Port Huron
Pollard, Jno. W.....St. Johns
Pomeroy, E. H.....Calumet
Porter, J. A.....Brooklyn
Post. J. A.....Lansing
Prescott, A. B.....Ann Arber
Price, Adam.....Almont
Pyle, Benj.....Grand Rapids
Ralston, David.....Cadillac
Randall, I. E.....W. Bay City
Ranney, Geo. E.....Lansing
Ransom, F. H.....Bloomingdale
Read, L. C.....Grand Rapids
Reed, Jas. H.....Battle Creek
Reed, W. F.....Cheboygan
Reycraft, J. J.....Petoskey
Renaud, Geo. L.....Detroit
Rhodes, L. G.....South Haven
Riecke, Jno. W.....Grand Rapids
Riker, Jno. D.....Pontiac
Robinson, D. E.....Jackson
Robbins, F. M.....Detroit
Robinson, F. W.....Sturgis
Roberson, Geo. G.....Utica
Roberts, A. J.....Jackson
Rockwell, A. H.....Kalamazoo
Rogers, A. S.....Saginaw
Rogers, J. R.....Grand Rapids
Roller, L. A.....Grand Rapids
Root, P. S.....Monroe

Digitized by Google

NAMES AND RESIDENCES.

Rouse, J. S.....Saginaw
Rowe, B. B.....Saginaw
Rowe, Wm. E.....Allegan
Rozema, S. L.....Grand Rapids
Ruggles, F. E.....Bay City
Rutherford, Frances A.....Grand Rapids
Sanford, H. E.....Detroit
Sample, C. H.....Saginaw
Sanderson, J. H.....Edmore
Sands, Theo. E.....Battle Creek
Sayles Perry.....Kalamazoo
Sawyer, W. H.....Hillsdale
Schaberg, H. H.....Kalamazoo
Schemer, Ernest.....Fowler
Schell, L. E.....Detroit
Scherer, Otto.....Detroit
Schoales, W. L.....St. Clair
Schurtz. Perry.....Grand Rapids
Scidmore, A. W.....Three Rivers
Seeley, A. L.....Mayville
Sherrill, E. S.....Detroit
Shickle, Chas.....Bennington
Shillito, Frederick.....Marcellus
Shillito, E.....Marcellus
Shipman, G. W.....Armada
Shotwell, A. N.....Mt. Clemens
Shumway, F. W.....Williamston
Shurly, E. L.....Detroit
Shurley, B. R.....Detroit
Sigler, H. F.....Pinckney
Small, S. I.....Saginaw
Smith, Eugene.....Detroit
Smith. E. B.....Detroit
Smith, Mary E.....Grand Rapids
Smith, R. R.....Grand Rapids
Smith, S. K.....Port Huron
Snook, J. M.....Kalamazoo
Snyder, John.....Mecosta
Solis, J. C.....Ann Arbor
Southworth, C. T.....Monroe
Spencer, Ralph H.....Grand Rapids
Stanton, G. A.....Belding
Statler, H. O.....Berrien Springs
Stealey, A. R.....Charlotte
Stevens, Samuel.....Dowagiac
Stevens, W. C.....Detroit
Stewart, Chas. E.....Battle Creek
Stewart, O.....Port Huron
Stewart, Peter.....Hadley
Stimson, C. A.....Eaton Rapids
Stockwell, C. B.....Port Huron
Stone, Geo. W.....Metamora
Stone, D. F.....Bay City
Stone, W. A.....Kalamazoo
Strahan, D. H.....Pewamo
Strangways, W. F.....Flint
Stuck, L. F.....Allegan
Sutherland, C. J.....Clarkston
Summers, F. D.....Detroit
Suylandt, C. G.....Gladwin
Swaney, H. N.....Eagle
Swanton, L.....Reed City
Tappey, E. T.....Detroit
Taylor, J. E.....Ovid
Taylor, H. F.....Mt. Clemens
Taylor, P. B.....Clio
Taylor, Jas. H.....Lapeer
Taylor, W. H.....Clio
Thoms, F. M.....Lansing
Thomason, H. D.....Albion

NAMES AND RESIDENCES.

Thompson, A. C.....St. Clair
Thompson, Fred. C.....East Tawas
Tibbals, F. B.....Detroit
Tibbits, M. A.....Linden
Tinker, F. A.....Lapeer
Toan, J. W.....Allegan
Todd, Geo. W.....Jeddo
Towsley, F. A.....Midland
Troy, Ed. H.....Detroit
Tupper, Horace.....Bay City
Turner, F. N.....Webberville
Tuttle, John L.....Clinton
Valade, J. J.....Newport
Vander Laan, J.....Muskegon
Van Dusen, E. H.....Kalamazoo
Van Zwaluwenburg, C.....Kalamazoo
Vaughan, O. M.....Covert
Vaughan, V. C.....Ann Arbor
Voorhees, G. V.....Coldwater
Wade, D. W. C.....Holly
Walker, F. B.....Detroit
Walker. H O.....Detroit
Walker, T. H.....Detroit
Walkley, W. S.....Grand Haven
Wanty, Emma M.....Grand Rapids
Ward, E. B.....Laingsburg
Warren, W.....Detroit
Warren, A. J.....Mt. Clemens
Watson, C. S.....Breckenridge
Weaver, F. A.....Charlotte
Webber, N. W.....Detroit
Welsh, D. E.....Grand Rapids
Wessinger, J. A.....Ann Arbor
West, Arthur E.....Eaton Rapids
Wheeler, C. S.....Flushing
Weller, M.....St. Johns
Wheelock, A. S.....Goodrich
Whinery, J. B.....Grand Rapids
White, J. V.....Detroit
White, M. C.....Dowagiac
Whitmore, Henry W.....Quincy
Wilbur, C. L.....Lansing
Wllbur, C. T.....Kalamazoo
Wilbur, E. P.....Kalamazoo
Williams, G. S.....Muskegon
Wiliams, H.....E. Saginaw
Williams, Mary A.....Bay City
Williams, N. H.....Jackson
Williamson, T. M.....Saginaw
Wilson, M.....Port Huron
Wilson, W. D.....Mt. Clemens
Wilson, W. E.....Grand Ledge
Wilson, J. E.....Rochester
Winter, J. A.....Detroit
Wisse, I.....Grand Rapids
Wolfe, F. E.....Grayling
Wood, D. H.....Quincy
Warthin, A S.....Ann Arbor
Wright, W. C.....Unionville
Wyman, H. C.....Detroit
Yarbrough, Chas. C.....Detroit
Yates, Albert.....Washington
Yates, H. W.....Detroit
Yates, Jas.....Roseville
Yates, O. E.....Holland
Yerex, D. V.....Imlay City
Young, W. G.....Grand Rapids
Young, W. H.....Nashville
Zimmerman, S.....Wayne

Digitized by Google

CHANGES IN MEMBERSHIP

DURING THE YEAR TO SEPTEMBER 1, 1899.

DROPPED.

FOR NON-PAYMENT OF DUES.

A. L. Arnold, Owosso.
M. C. Bristol, Bay City.
C. W. Clark, Caro.
Edwin Eaton, Hudson.
E. J. C. Ellis, Clayton.
E. A. Fletcher, Detroit.
J. R. Foote, Bay City.
J. K. Gailey, Detroit.
M. Gallagher, Bay City.
F. N. Gier, Hillsdale.
H. W. Graham, Mt. Morris.
J. H. Hudson, Merrill.
William Kerr, Bay City.
S. S. Ludlum, Harrisville.
Eugene Moore, Battle Creek.
Jabez Perkins, Owosso.
J. F. Pinkham, Belding.
J. S. Shoemaker, New Lothrop.
H. E. Smith, Detroit.
E. D. Sutherland, Bay City.
J. C. Wilson, Flint.

DROPPED.

BECAUSE REMOVED FROM STATE.

Geo. W. Crosby, Ludington to Sheboygan, Wis.
J. Morris Brown, Detroit to ———.
Kate B. Lindsay, Battle Creek to ———
E. G. Miner, Bay City to Mannsville, N. Y.
Edward E. Moore, Hillsdale to ———

RESIGNED.

C. C. G. Brumme, Detroit.
Geo. C. Schemm, Saginaw.

Digitized by Google

DIED.

L. N. Beagle, Flint.
S. T. Beardslee, Armada.
T. H. Briggs, Battle Creek.
McKendra Best, Grand Rapids.
John B. Fares, Romeo.
D. A. McTavish, W. Bay City.
S. D. O'Brien, Kalamazoo.
Cyrus Smith, Jackson.
Hiram Walters, Eaton Rapids.

Total number dropped, - -	87
New members, - - - -	44
Gain in membership, - - -	7
Total active members Sept. 1, 1899, -	564

Digitized by Google

REGULAR MEDICAL SOCIETIES IN MICHIGAN. LOCAL, COUNTY AND DISTRICT, 1899.

NAME OF THE SOCIETY	ORGANIZED	ACTIVE MEM'S	MEETINGS	PRESIDENT	SECRETARY
1-Northeastern District Med. Society.	1858	75	Semi-annual	H. McColl, Lapeer	Sarah E. Conner, Port Huron
2-Washtenaw County Med. Society...	1866	39	Quarterly ...	G. M. Hull, Ypsilanti	Ellen B. Murray.....
3-Detroit Academy of Medicine.....	1869	35	Semi monthly	David Inglis, Detroit	H. D. Jenks .....
4-Cass County Medical Society	1871	17	Semi annual	L. D. Tompkins, Cassopolis	D. A. Link, Cassopolis .....
5-Northern Tri-State Med. Ass'n....	1873	100	Semi annual	C. N. Smith, Toledo, O...	H. D. Wood, Angola, Ind...
6 Detroit Medical & Library Ass'n ...	1876	174	Weekly	Andrew P. Biddle, Detroit.	P. C. McEwen, Detroit ....
7-Calhoun County Medical Society ...	1876	65	Quarterly ..	Jno. L. Ramsdell, Albion .	W. H. Haughey, Battle Creek
8-Wayne County Medical Society	1876	225	Semi monthly	Lewis E. Maire, Detroit ..	J. H. Sanderson, Edmore ..
9-Grand River Valley Med. Ass'n	1880	20	Quarterly ...	D. M. Greene, G'd Rapids.	B. B. Godfrey, Holland ....
10-Med. Ass'n of Barry & Eaton Counties	1882	35	Quarterly ..	Frank A. Weaver, Charlotte	C. A. Stimson, Eaton Rapids
11-Kalamazoo Academy of Medicine ..	1883	110	Bi monthly .	W. M. Edwards, Kalamazoo	A. H. Rockwell, Kalamazoo.
12-Detroit Gynecological Society	1884	33	Monthly	Johann Flintermann, Detroit	Fritz Maass, Detroit.....
13-Grand Rapids Academy of Medicine	1884	33	Fortnightly..	A. Hazelwood, G'd Rapids	C. E. Hooker, Grand Rapids
14-Bay County Medical Society	1886	36	Monthly	D. F. Stone, Bay City	Wm. Kerr, Bay City.....
15-Mich. Surgical & Pathological Soc'y.	1891	90	Monthly	E. B. Smith, Detroit	Anna Staring, Detroit .....
16-Muskegon Medical Society.....	1892	19	Bi monthly .	Geo. S Williams	A. A. Smith .....
17-Pontiac Medical Society.	1892	15	Monthly	J. Morse, Pontiac	Wm. McCarroll, Pontiac ...
18-Saginaw County Medical Society ...	1893	42	Monthly	S. C. J. Ostrom, Saginaw.	M. C. L. Kitchen, Saginaw .
19-Monroe County Medical Society....	1895	18	Quarterly ...	P. S Root, Monroe	G. B. McCallum.....
20-Upper Peninsula Medical Society ..	1896	64	Yearly	B. D. Harison, Sault Ste. Marie	S. E Cruse, Iron Mountain.
21-Grand Rapids Med. & Surgical Soc'y	1896	80	Bi monthly .	J. H. Innis, Grand Rapids.	H. J. Chadwick, G'd Rapids

PRACTICALLY EXTINCT

1-Union Med. Soc'y of Northern Mich.	1876	Last meeting in 1891.
2-Oakland County Medical Society...	1885	
3-Pere Marquette Medical Society ...	1886	
4-Gratiot County Medical Society	1887	
5-Saginaw Valley Medical Club	1889	
6-Jackson Academy of Medicine	1889	
7-Huron County Medical Society	1890	Can get no reply to letters addressed to officers.
8-Clinton County Medical Society....	1890	

Digitized by Google

In Memoriam.

	Year Elected.	Time of Death.
JAMES B. ABBOTT, Clayton	1889	1890
J. ANDREWS, Paw Paw	1872	1886
EUNICE J. AVERY, Coldwater	1891	1895
S. M. AXFORD, Flint	1866	1874
GEO. BARNES, Kalamazoo	1871	1873
S. T. BEARDSLEE, Armada		....
SARAH A. BEARDSLEY, Jonesville	1884	1886
L. N. BEAGLE, Flint		....
J. H. BEECH, Coldwater	1876	1878
JOHN H. BENNETT, Coldwater	1873	1891
D. W. BERDAN, Cheboygan	1889	1894
Z. E. BLISS, Grand Rapids	1874	1877
E. J. BONINE, Niles	1866	1892
JUDSON BRADLEY, Detroit	1879	1889
THOS. N. BRIGGS, Flint		....
*WM. BRODIE, Detroit	1866	1890
FRANK W. BROWN, Detroit	1884	1893
I. E. BROWN, Detroit	1874	1890
I. A. BROWN, Detroit	1868	1882
WM. BROWNELL, Utica	1866	1884
T. R. BUCKHAM, Flint	1888	1891
A. R. CALKINS, Allegan	1871	1873
A. B. CAMPBELL, Mason	1884	1891
J. V. CHAMBERLAIN, Ypsilanti	1881	1886
C. L. CHANDLER, Richmond	1889	1893
H. F. CHEEVER, Ann Arbor	1869	1877
E. M. CLARK, Detroit	1869	1871
JAMES M. COOK, Muskegon	1890	1894
M. A. COOK, Riley Center	1888	1892
ALANSON CORNELL, Ionia	1866	1873
*EDWARD COX, Battle Creek	1871	1882
*EDMUND P. CHRISTIAN, Wyandotte	1867	1896
JOHN DAY, Eng., Geelong, Australia	1877	1881
*WM. H. DeCAMP, Grand Rapids	1866	1898
W. DECKER, Mt. Clemens	1878	1881
THOMAS DOLAN, Lansing	1881	1881
E. B. DUNNING, Paw Paw	1890	1894
E. S. DUNSTER, Ann Arbor	1875	1888
D. O. FARRAND, Detroit	1866	1883
LOUIS M. FASQUELLE, St. Johns	1884	1889
JOHN B. FARES, Romeo		

* Ex-President.

Digitized by Google

In Memoriam.

	Year Elected.	Time of Death.
IRA W. FISKE, Kalamazoo	1872	1891
A. H. FORSYTH, Lake View	1890	1895
RUTH A. GARRY, Ypsilanti	1872	1877
V. L. GARRET, Alaska	1881	1890
JOHN GEORG, Detroit	1884	1888
CALEB B. GILBERT, Detroit	1867	1892
H. M. GREEN, Grand Rapids	1872	1872
STEPHEN A. HAGADORN, Bay City	1879	1891
L. S. HAMILTON, Tecumseh	1874	1891
D. C. HAUXHURST, Battle Creek	1878	1882
S. L. HERRICK, Three Rivers	1868	1875
J. A. HEATON, Detroit	1866	1882
CHAS. HICKS, Plymouth	1882	1885
*HOMER O. HITCHCOCK, Kalamazoo	1870	1878
TYLER HULL, Diamondale	1887	1898
EDWARD M. HUME, Dearborn	1872	1877
R. C. HUTTON, Detroit	1879	1890
*RICHARD INGLIS, Detroit	1878	1880
*J. H. JEROME, Saginaw	1866	1883
LEVI H. JOHNSON, Detroit	1888	1896
D. A. JOY, Marshall	1883	1887
H. L. JOY, Marshall	1883	1892
AUGUSTUS KAISER, Detroit	1873	1894
A. H. KIMBALL, Battle Creek	1887	1894
AMASA F. KINNE, Ypsilanti	1878	1864
ALBERT E. LEETE, Romeo	1866	1878
*C. J. LUNDY, Detroit	1878	1892
HENRY F. LYSTER, Detroit	1866	1894
CHARLES A. MASSBACHER, Saginaw	1891	1896
J. R. McGURK, Capac	1885	1894
D. A. McTAISH, West Bay City		...
NATHAN MITCHELL, Colon	1872	1879
WILLIAM MOTTRAM, Kalamazoo	1871	1891
DWIGHT NIMS, Jackson	1872	1879
JAMES FANNING NOYES, Detroit	1866	1896
N. I. PACKARD, Sturgis	1897	1898
*A. B. PALMER, Ann Arbor	1879	1888
GEORGE C PALMER, Flint	1893	1894
GEORGE C. PEASE, Fulton	1883	1895
ZINA PITCHER, Detroit	1864	1871
J. S. REEVES, East Tawas	1873	1878

* Ex-President.

Digitized by Google

In Memoriam.

	Year Elected.	Time of Death.
*ABRAM SAGER, Ann Arbor	1866	1877
H. B. SHANK, Lansing	1870	1889
*CHAS. SHEPARD, Grand Rapids	1867	1893
CYRUS SMITH, Jackson		
H. B. SMITH, Mackinaw City	1885	1892
E. S. SNOW, Daarborn	1876	1895
CHAS. T. SOUTHWORTH, Monroe	1866	1884
ERASTUS SPAULDING, Grand Rapids	1880	1892
W. D. STEBBINS, Detroit	1867	1888
R. STEPHENSON, Adrian	1875	1890
J. M. SUTHERLAND, Caledonia	1884	1888
F. L. SUTHERLAND, Oscoda	1888	1888
J. W. SWITZER, Montague	1884	1888
HENRY TAYLOR, Mt. Clemens	1885	1889
*J. R. THOMAS, Bay City	1866	1884
A. A. THOMPSON, Flint	1885	1892
GEO. W. TOPPING, De Witt	1866	1895
C. A. TUCKER, Coldwater	1884	1895
E. TWISS, Union City	1874	1895
E. V. TYLER, Bay City	1866	1889
HIRAM WALTER, Eaton Rapids	1882	1898
FRANK WEBB, Alma	1873	1875
M. E. WHALEN, Paw Paw	1890	1895
*A. F. WHALEN, Hillsdale	1874	1890
JOHN B. WHITE, Saginaw	1886	1894
O. W. WIGHT, Detroit	1875	1880
S. M. WILKINS, Eaton Rapids	1875	1895
W. A. S. WILLIAMS, Petoskey	1890	1893
WILLIAM WOOD, Grand Rapids	1890	1895
ELI WOODMAN, Farmington	1879	1892
L. C. WOODMAN, Paw Paw	1879	1883

* Ex-President.

Digitized by Google

3 9015 06731 2085

Digitized by Google

In Memoriam.

Digitized by Google

UNIVERSITY OF MICHIGAN
3 9015 06731 2085

Digitized by Google

Digitized by Google